

## **THE FIRST TOWNSHIP EXTERIORS IN MINNESOTA**

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### **Introduction**

The rectangular public land survey net was laid out on the land surface in two steps. First, a deputy was awarded a contract to run the exterior lines of townships and set the appropriate corner monuments on them. Then a second deputy was awarded a contract to subdivide those townships. Both steps were described in the General Instructions but the work of the two was obviously quite different. Moreover, the deputy creating the township exterior in an area was working without any knowledge of the area and with only the controls or existing points of reference that had been previously made in a different area, and to which he was to connect. As a way of introducing the topic I explore the township exterior surveys made in 1847 by James M. Marsh under the general instructions of 1846.<sup>1</sup> (Figure 1)

There are two important reasons for looking at township exteriors. First, any line that the modern land surveyor needs to retrace or resurvey may be an exterior line or a subdivision line. Similarly, any corner that needs to be located or reestablished may lie on a township exterior.<sup>2</sup> Thus, the modern land surveyor must be aware of how township exteriors were run and monumented. Secondly, the survey records, such as the field notes and the township plats used by surveyors to reconstruct the lines and reestablish the corners are a blend of the records relating to both exteriors and subdivisions. In fact, they contain information relating to a minimum of two different contracts awarded to two different deputies at two different times.

Importantly, for the spread of the public land surveys, townships were established independently of their subdivision.<sup>3</sup> Exteriors were established in response to the needs of a coherent, continuous rectangular net, which demanded that township exteriors be established in a contiguous and logical manner across an area. Townships were subdivided in response to the actual or perceived demand for land without regard for the niceties of surveying. As a result, although townships were continuously established and subdivided, those townships that were established in any one year were not necessarily the townships that were subdivided in that year. Maps accompanying the Surveyor General's annual report show the rather dynamic nature of the status of the surveys at any one time. (Figure 2)

### **The 1846 General Instructions**

The General Instructions issued by the Surveyor General George W Jones, in 1846 were the first to provide direction to all deputies working in the territories of Iowa and Wisconsin.<sup>4</sup> Although the Instructions standardized some procedures and practices, they were silent on many important aspects of surveying. Presumably procedures not specifically addressed had already been addressed in other instructions or were considered to be already known to the deputy surveyors from previous surveying experiences.<sup>5</sup>

In his field notebook the deputy running the exterior lines was admonished, "to observe and note the true magnetic variation, at least once upon every mile or section line, and as much oftener as there is a change therein."<sup>6</sup> He was also to enter "(t)he bearing trees, standing upon the west side

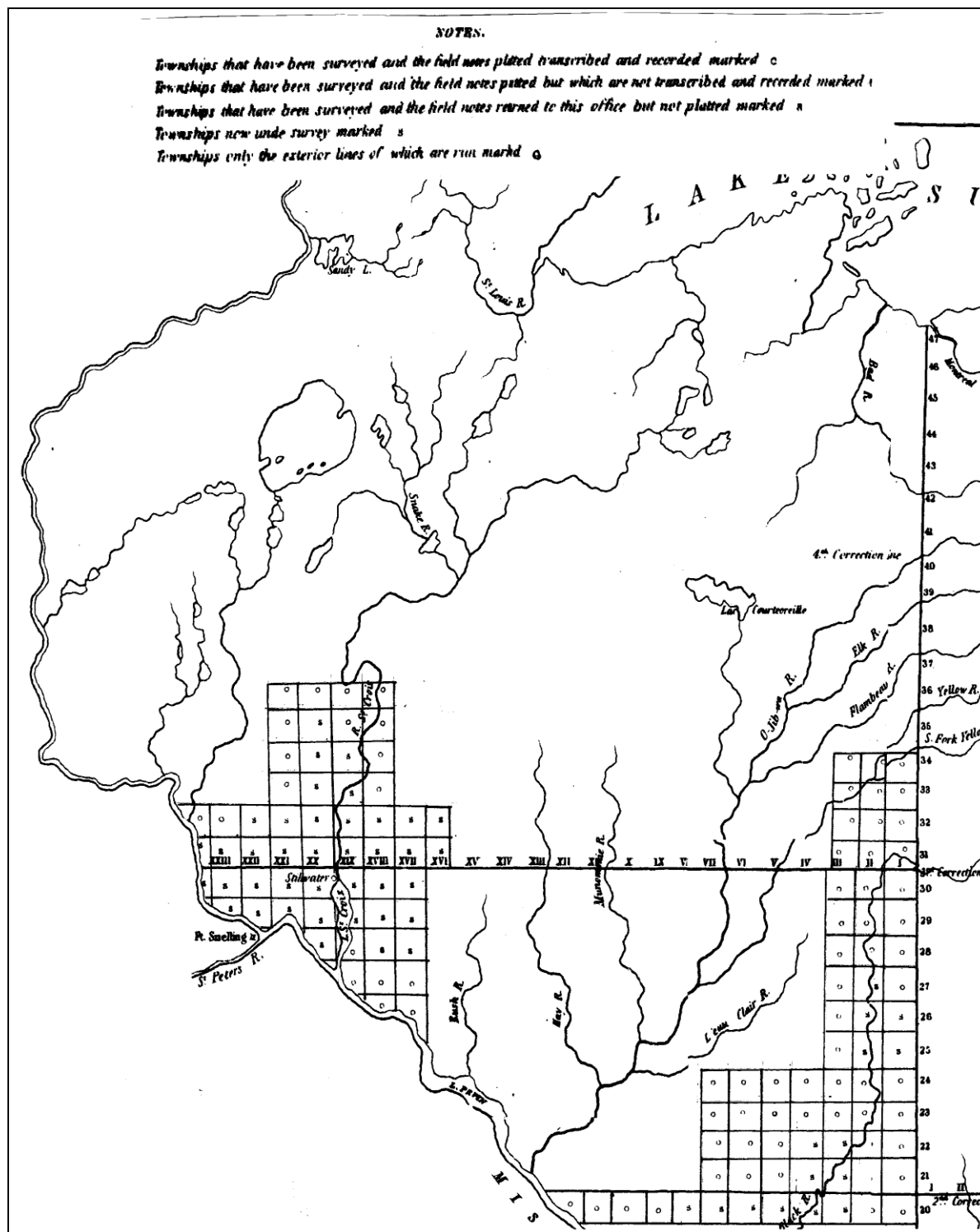


Figure 1. The surveys in western Wisconsin Territory in 1847. Annual Report of the Surveyor General of Wisconsin and Iowa, see footnote Township lines drawn by author Marsh surveyed two tiers of townships north of the 3<sup>rd</sup> Correction and all of the townships south of the Correction (Obviously, I have not drawn the offsets correctly)

of range, and upon the north side of township lines” first in his field notes. For information, the Surveyor General noted,

North and south lines are termed range lines; east and west, township lines. The former are styled, in the field notes, the line between certain ranges; the latter, the line between certain townships. Each mile both of a range and township line, is particularized by the number of the sections between which it is run, thus: north between sections 31 and 36, west between sections 1 and 36.<sup>7</sup>

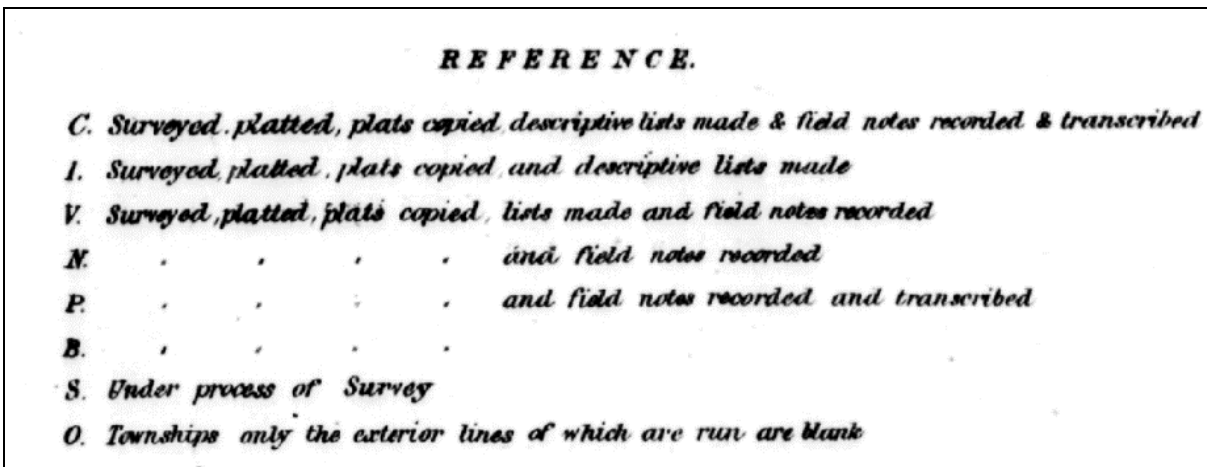


Figure 2. The Legend for the Map Accompanying the Surveyor General’s 1850 report.

The exteriors were to be run “with an instrument that operates independently of the magnetic needle, which is to be employed only to show the true magnetic variation,” as follows,<sup>8</sup>

Upon the base or township line forming the southern boundary of your district, township corners are established at intervals of six miles. From each of these corners you are to run range lines due north, six miles; establishing a quarter section corner at the end of the first forty, and a section corner at the end of the first eighty chains, and observing the same order and intervals of establishing quarter section and section corners to the end of the sixth mile, where you will temporarily set a township corner post.

You will then commence at a township corner upon the first range line east of your district, and immediately east of the township corner posts temporarily set by you, and from thence run due west across your whole district, intersecting your range lines at or within three chains and fifty links, due north or south, of your said six mile posts. At the point of intersection, if within the above limits, you will establish a township corner. Upon this township or last mentioned line, quarter section and section corners are to be established at the same distances and intervals as directed for range lines; observing that the length of each and every township line which you are to establish, is in no case to exceed or fall short of the length of the corresponding township boundary

upon the south, more than three chains and fifty links. If, however, in closing your first tier of township, and all others closing to or upon old work, you find it impossible to preserve the true course of your lines and close within the above limits, you are to resurvey and examine until you detect the real cause of discrepancy, which if not in your own work, you will report to this office, and for which you will provide in the field, in all instances where the same is practicable, by adding to, or deducting from the length of your first range line or lines. And where, in order to close a township to or upon old work, you are compelled to employ a variation greater or less than the true magnetic variation, both must be stated.

After closing your first tier of townships, you are to run up and close successive tiers, to the completion of your district, by the same method of survey as directed for the first tier.<sup>9</sup>

There appears to have been two operations involved in constructing the township. (Figure 3a) The deputy was first required to run range lines due north from township corners previously set, a line that would obviously form the southern exterior of a township, establishing the eastern and western township exteriors across the district assigned in his contract. Along these lines he was to set the appropriate corners every 40 chains and temporary township corners six mile from where he started. He was to run all the range lines in a tier of townships before starting on the northern boundary exterior that would complete the township exteriors.<sup>10</sup> He then ran the northern township exteriors westwards across his district as a continuous line from the northwest township corner of the township immediately east of his district.<sup>11</sup> Under these instructions, the deputy did not establish one township and then another across the district he had been assigned but rather established range lines that formed the east and west boundaries of townships on a preexisting south exterior line and then completed a tier of townships by running the northern exterior, a line that would simultaneously form the southern exterior and the base for the next tier of townships north. In this manner township exteriors spread from a previously-established township line northwards and from a previously-established township line westwards. The sample field notes cannot be reconciled with this reconstruction of how the instructions directed the deputies to run the exteriors. (Figure 3b)<sup>12</sup>

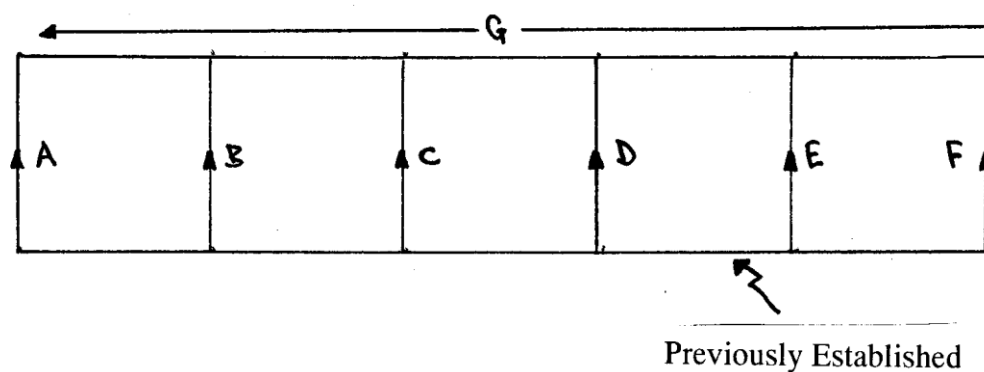


Figure 3A The Process of Running Township Exteriors According to the Instructions.

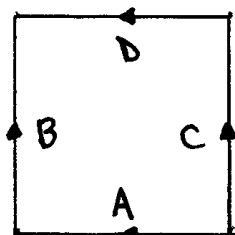


Figure 3B The Process of Running Township Exteriors According to the Sample Field Notes.<sup>13</sup>

The deputy was required to keep a field notebook in which he was to record what he saw and did, a notebook that he was to return to the Surveyor General's office. Astonishingly, the deputy was authorized to alter his notebook after he ran the northern exterior line. He was admonished,

After a township corner is established ... you are to complete the notes of the corresponding range line, by inserting the said corner, with the true distance thereto, and adding or erasing the notes of any topography or other minutes, that may be included or excluded by thus adding to or deducting from the length of the range line as temporarily established.<sup>14</sup>

He was also required to draw and submit to the Surveyor General,

(A) diagram, drawn upon a scale of one and a half inches to six miles, on which you are to represent each boundary you have run with the length and variation thereof, and with all the topography thereupon that can be properly expressed upon that scale.<sup>15</sup>

This diagram was given to the deputy who was awarded a contract to subdivide townships.<sup>16</sup>

### **The Township Exterior Surveys Completed by James M. Marsh<sup>17</sup>**

On May 22, 1847 the Surveyor General of Wisconsin and Iowa, George A Jones, awarded a contract to Henry A. Wiltse to continue the 4<sup>th</sup> Principal Meridian northwards and to run the 3<sup>rd</sup> Correction "parallel" from the NE corner of T30N on the 4<sup>th</sup> PM to the Mississippi River in Wisconsin Territory. On the same day he also awarded James M. Marsh a contract to establish a district of townships on the east and west side of the St. Croix both north and south of the Correction Line to be run by Wiltse.<sup>18</sup> In a letter labeled, "special instructions," and dated May 22, 1847, Jones wrote to Marsh,

Herewith you are furnished a diagram representing the position and probable extent of your contract.<sup>19</sup>

Should Dr. DD Owen the present US Geologist for a district of Wisconsin Territory within which your survey lies, or at his solicitation one or more of his assts, desire quarters in your camp during the progress of your survey you will please extend them that privilege upon condition of their paying you a just proportion of the expenses of your party.

It being my design to place the townships of your district under a contract for subdivision immediately upon the return of your survey thereof, it is imperative that you will prosecute the same with the utmost possible dispatch consistent with accuracy.<sup>20</sup>

Marsh established 58 full and fractional townships on both side of the St. Croix, all of which used the 3rd Correction Line as a base, between August 10 and October 22. First, he established two tiers of townships north of the Correction Line, August 10 – September 8, 1847. Then, he established township south of the Correction Line, September 9 – October 22. (Figure 4) An examination of his field notes shows how he followed the General Instructions. He ran the Range lines, defining the east and west exterior lines, south to north before running the Township line, which defined the north boundary, east to west. The Range lines north of the Correction Line were run starting at the westernmost part of his district progressing eastwards. The Range lines south of the Correction Line, however, were run from the easternmost part of his district and progress westwards. Several Range lines were run southwards, something that was not mentioned in the General Instructions. The most obvious one is the Range line between 16 and 17 West, delimiting the block of townships that Marsh would establish south of the Correction Line. Obviously, the course of the Mississippi River forced him to deviate somewhat from a consistent progression from south to north.

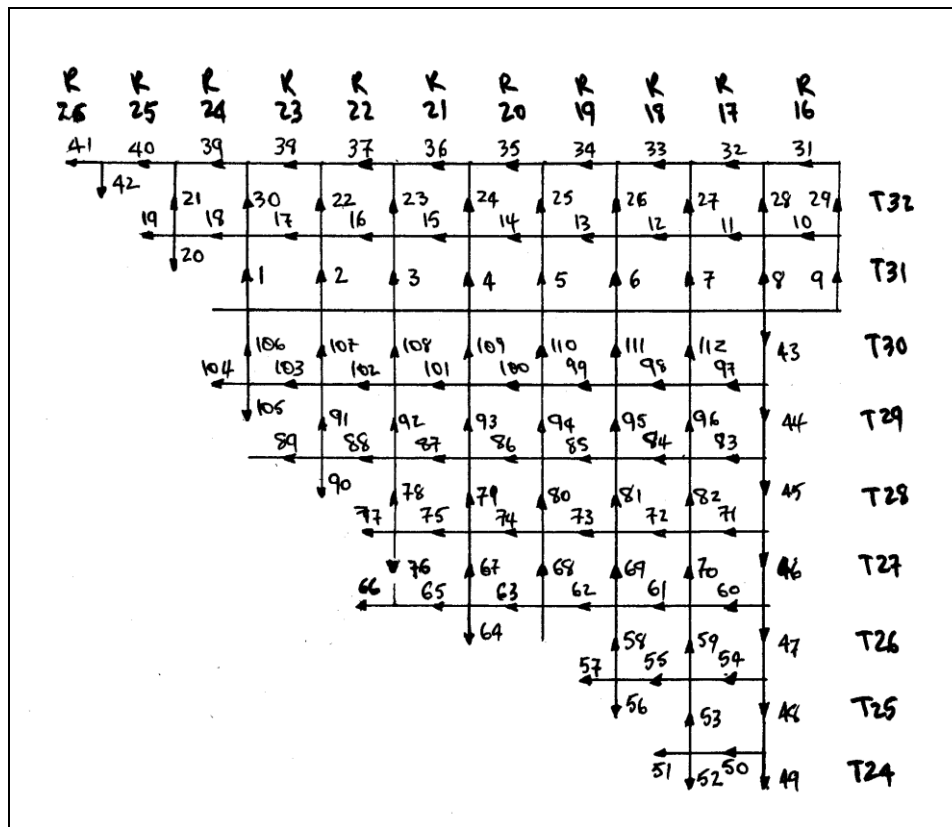


Figure 4. A Diagrammatic Representation of James M. Marsh Fieldwork. (Arrows refer to the direction he worked and the numbers refer to the sequence of his line segments)

He started his work on the western end of the Correction Line – the southern exterior to T31N – on August 10. He ran a line northwards to create the Range line between 23 and 24 West setting the appropriate corners and a temporary township post six miles from where he started. He then proceeded eastwards along the correction line establishing Range lines and appropriate corners, including temporary township corners, between 23 and 22, 22 and 21, 21 and 20, 20 and 19, 19 and 18, 18 and 17, 17 and 16, 16 and 15. This work took him six days. He then ran a line westwards across the entire tier of T31N, setting the appropriate corners and connecting the line with his temporary township corners, to the Mississippi River. He then ran a line south to establish the Range line between 24 and 25 West to the Mississippi creating fractional T31NR25W. This work was completed in eight days. On August 24 he ran Range lines north of the tier of townships he had just established, between 24 and 25, then successively between 23 and 22, 22 and 21, 21 and 20, 20 and 19, 19 and 18, 18 and 17, 17 and 16, and 16 and 15. Finishing these lines he returned to run the Range line between 23 and 24 on August 31.<sup>21</sup> He then ran a line westwards across the entire tier of township, setting the appropriate corners and connecting the line with his temporary township corners, to the Mississippi River, thus completing the tier of township T32N. He then ran a line south to establish the Range line between 25 and 26 West to the Mississippi creating fractional T32NR26W on September 8.

The importance of these surveys was made obvious in a letter dated August 27, 1847 from the Surveyor General to the Commissioner of the General Land Office, Richard M. Young,

(It was your desire to reach the pine lands of St Croix river by the Surveys of the present season. My anxiety to execute your instructions was if possible increased by the representations of the officers of the "Boston Lumbering Company" resident on the St Croix that the country in question was fast filling up with Settlers and that the pine timber, which gives to that region its great value, was very fast disappearing.

The extension of the Fourth principal Meridian and the establishment of the third correction line were surveys that necessarily preceded the survey of any portion of the St Croix country. Indeed neither the relative position of those pine lands with known points upon the Mississippi & St Croix rivers nor the relation which those points had to the public Surveys could be known until after the establishment of the base line in question.

It was known, however that the Country bordering Lake St Croix & between that Lake and the Mississippi river, comprised a heavier settlement than any unsurveyed portion of my district. The township lines of this region were consequently contracted for, with the belief that they would reach the St Croix pine lands. By intelligence, however, derived from H. A. Wiltse Esq. upon the return of his field notes of the Survey of the Third Correction line it appears that the valuable portion of the pine timber is much further north than was anticipated. Even the falls of St Croix river are north of the district of township lines assigned to J. M. Marsh Esq. and which it was my design to have put under contract for subdivision this fall. In addition to these is the fact, farther, that I am advised by Dr D. D. Owen United States Geologist for Wisconsin that a district of country immediately north of and

adjoining the district now being run into townships by Mr. Marsh and lying equally upon either side of the St Croix river, is vastly important on account of its mineral character and recommends that it be immediately surveyed.

With a view of executing your instructions before alluded to and of accommodating the wishes of Hon. C. Cushing recently, and with much more urgency repeated by the Officers of the Lumbering Company to which he is attached, as well as to second as far as possible the important examinations of Dr. D.D. Owen, I have just withdrawn a portion of the money with which I designed to have subdivided the settled lands adjoining Lake St. Croix and applied it to the survey of a district of township lines on either side of the St. Croix river & north of the district of township lines upon either side of the St. Croix river & north of the district assigned to Mr. Marsh in May last.

I have now, therefore, to request, as a matter of the utmost moment to the Government and to the settler upon the St Croix lands, that you make an additional apportionment of five thousand dollars to enable me to subdivide the remainder of the district assigned to Mr. Marsh, as well as that district just assigned north of his.

It is confidently believed, that, if this additional apportionment be made immediately, it will enable me to provide for the subdivision of the townships just named, in time to be examined by Dr Owen this fall and which will ensure the sale of a large district of country, early in the ensuing spring.<sup>22</sup>

On August 31, 1847, whilst working on the surveys north of the Correction Line, Marsh wrote to the Surveyor General

I embrace the present opportunity of informing you of the progress of my work. In consequence of so much bad country on Mr. Wiltse's contract and the time consumed in finishing his and the country North of the 3<sup>rd</sup> Correction Line Between St Croix and Mississippi being so very swampy, I have made very slow progress. The country North of the 3<sup>rd</sup> Correction between the 2 Rivers for a great portion is One Constant Chain of Lakes, Marshes & Swamps. So much so that it is utterly impossible for my Horses to pass.

Consequently we have every thing to pack on our backs which retards our progress not a little and is extremely hard on myself & men.

I shall make every effort to accomplish my work as soon as possible and every Sacrifice that I can will be most willingly made except the compromising the accuracy of my work to finish it as soon as is in my power. I have had a great deal of cloudy weather and the variations of the needle are so great that it is almost imperatively necessary that I have the sun. The variation frequently changes from 8° to 12° 30' in 10 or 12 miles. I have now been on my own work only about 20 days. I have had an attack of the Scurry (sic) which has made my mouth so sore that I can with difficulty eat anything.<sup>23</sup>

I have written you the above in part to explain to you the reason of my making no better progress for I know it is the intention to put the work under contract for Subdivision. That part North of the correction will be ready very soon.<sup>24</sup>

On September 9 Marsh began establishing townships south of the Correction Line. Starting at the southwest corner of T31NR16W, on the 3<sup>rd</sup> Correction Line, he ran a Range line between 16 and 17 West southwards to the Mississippi, some 40 miles from September 9-13. In the following five weeks he created 37 full and fractional townships. Starting at the south end of the Range line he just established he ran the lines as shown in Figure 4. There are two aspects of these surveys that are interesting. One, obviously, is the sequence in which Marsh ran the lines. Two, is the way he treated Lake St. Croix running his line straight across it. On October 4, he wrote in his field notes labeled "Between Township 28 & 29 N Range 19 W 4 Meridian,"

West between sections 1 & 36

Var. 8<sup>o</sup> 30'

33 30 To lake runs NW & SE, set witness corner to ¼ section corner

40.00 Quarter section in lake

41.20 Over lake

80.00 Set post for corners to section 1, 2, 35 & 36 & made mound

Pit 8 links south

Land highly rolling, Oak barrens, soil 2<sup>nd</sup> rate.<sup>25</sup>

On September 20<sup>th</sup> the Surveyor General wrote to Marsh at Lake St Croix commenting on Marsh returns correcting the work Wiltse had done on the 3<sup>rd</sup> correction line,

Herewith you will receive a small volume containing your corrections of a portion of the "Third correction line", Wisconsin Territory, received in you recent letter to my chief clerk. As the same volume is to be placed on file and thus to become a matter of perpetual Record in this office, it is indispeisible (sic) that you make an affidavit to the field notes, therein, attested to by your assistants in the usual manner.

It is observed, in the said notes that you correct for the correction by traverse of the evidence of the ¼ Sec. Corner, on the south side of Sec 35, T. 31 Range 23, which is a mound. This is believed to be an oversight in your notes, but if not, you will please to demolish the said mound and establish another at the true corner without delay.

In returning this volume, you will please to state whether the original bearing trees adopted in your said minutes, at the respective corners where such is the fact are the nearest trees to be had, for under no other state of facts can such extreme distance to bearing trees be allowed.

Should you have occasion to make similar corrections in future, you will please to complete the same in the field.<sup>26</sup>

October 17<sup>th</sup>, 1847, Commissioner Young responded to Jones letter of August 27<sup>th</sup>,

You were correct in supposing that this office was anxious to have the pine lands of the St. Croix surveyed this season if practicable, and the measures adopted by your preliminary thereto, are indispensable and judicious.

The fact stated in your letter, that Dr. Owen reports the district north of that Pine region as value for mineral renders those surveys still more desirable. For this service, you state that Five thousand dollars will be required, in addition to the amount apportioned to your District, but you do not state the appropriation out of which you desire this amount to be taken. From the position of these lands it is presumed that the appropriation for geological surveys should be charged with it, and if so, I regret to inform you that no part of that appropriation is at the disposal of this office. One half of it having been apportioned to your District and the other half to Michigan in April last. If the amount now required can be transferred to this service temporarily from the amount apportioned to you out of the appropriation "for surveying the public lands." I see no objection to that course; or if you can apply a portion of that appropriation to this object at the price authorized by law, it would probably be better. I regret that no other arrangement can be made, the small appropriation for the survey of the public lands of the last session of Congress, having been apportioned in April last.<sup>27</sup>

On October 18<sup>th</sup>, whilst Marsh was still in the field the Surveyor General submitted his annual report for the fiscal year ending June 30<sup>th</sup> 1847, to the Commissioner of the General Land Office.<sup>28</sup> This report contained a map showing the extent of the surveys in Wisconsin Territory, a portion of which is shown in Figure 4.

Marsh returned his notes to the Surveyor General Office on November 1. A few days later, on November 6<sup>th</sup> 1847, presumably after the notes had been examined, the Surveyor General wrote to the Commissioner,

I will thank you to change the length of the South boundary of T31R24W of the 4<sup>th</sup> P M in W.T., upon the diagram of the 3d. correction line as surveyed by H A. Wiltse Dep Sur, from 1m 09ch 57lks to 1m 31ch 23lks.

Mr. Marsh found it impossible to conform to the measurement of the said line from the West end of R21 to the Mississippi river and close as directed in his instructions. Upon a re-measurement of this portion of the correction line above named, he made a uniform difference therewith of about 1.66chs per mile, which accounts for the 21.66chs now added. Mr. Wiltse reports that, over that portion of his work he was compelled from sickness to change chainmen, by which the discrepancy in questions, was unavoidably caused.<sup>29</sup>

## Conclusion

The exterior lines of township were run independently of the subdivisional lines, usually by

different deputies under different contracts. The first townships in what would become Minnesota were run by James M. Marsh under a contract dated May 22, 1847. Using the 3<sup>rd</sup> Correction Line, run only a few weeks earlier by Henry A. Wiltse, as a base, and following the General Instructions of 1846, Marsh laid out 58 fractional and full townships lying astride the St. Croix River. These townships were soon subdivided and the lands encompassed in them offered for sale at the public land auction held at St. Croix Falls in 1848.

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<sup>1</sup> See Squires, Rod. “The public land survey in Minnesota Territory, 1847-1852” Dis-closures (Winter, 1993) pp.10-17 for a description of the subdivisional surveys.

<sup>2</sup> In a uniform township, the exterior lines were 36 miles long on which were established 47 corners and the subdivision lines were 60 miles long on which were established 84 corners. This means that there is a greater probability that a line in need of resurveying is a subdivision line rather than a township exterior line and a corner in need of relocating is a corner on an subdivision line rather than a corner on an exterior line.

<sup>3</sup> Of course townships that were not established could not be subdivided.

<sup>4</sup> The instructions are reproduced in White, C Albert A History of the Rectangular Survey System (Government Printing Office Washington D.C. 1982) pp.340-355; and in Dodds, J. S. et al. Original Instructions Governing Public Land Surveys of Iowa (Iowa Engineering Society, Ames, IA. 1943) pp.69-79 (without the sample field notes). According to White *ibid* p.111 these instructions eliminated double corners on the exteriors thus “improving the rectangular system as it was executed in the field.”

<sup>5</sup> There was probably some word-of-mouth information. “Each deputy had preferred techniques and methods for surveying. Considerable variation in the execution of their work was allowed.” Dahl, John R. United States General Land Office Historical Surveying Instructions and their Influence on Surveys of the 3rd and 4th Correction Lines, 4th Principal Meridian, Minnesota (Unpub. MS thesis, St Cloud State University, 2006) p.30.

<sup>6</sup> White *supra* note 4 p.342.

<sup>7</sup> *Id.*

<sup>8</sup> *Id.* p.340.

<sup>9</sup> *Id.* 342.

<sup>10</sup> Note that there is no order prescribed for running these range lines. He could run the easternmost range line first and progress westwards or he could run the westernmost range line first and run eastwards.

<sup>11</sup> “You will then commence at a township corner upon the first range line east of your district, and immediately east of the township corner posts temporarily set by you,” is ambiguous. I have chosen to interpret it as described.

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<sup>12</sup> See Id. pp.346-349. The sample field notes relate to a fictitious township T58NR36W 4<sup>th</sup> P.M. Moreover, the dates given for establishing the exteriors seem fictional. The instructions were issued May 28, 1846 according to White p.339 but the dates of the exterior notes were January 10-16 . The notes were to illustrate how future surveys should be carried out in the future and presumably no surveys had been carried out under these instructions before they were issued.

<sup>13</sup> Id. pp.346-349.

<sup>14</sup> Id. p.342.

<sup>15</sup> Id.

<sup>16</sup> Whether the diagram submitted by the exterior deputy was redrafted before giving it to the subdividing deputy is not known. The Minnesota Historical Society has a number of diagrams depicting the township exteriors, see Kinney Greg & Lydia Lucas Guide to the Records of Minnesota's Public Lands (St. Paul. Minnesota Historical Society, 1985) p.54.

<sup>17</sup> The field notes can be found in Books 148-152 Wisconsin Public Land Survey Records, Original Field Notes and Plat Maps at <http://digicoll.library.wisc.edu/cgi-bin/SurveyNotes/SurveyNotes-idx?type=article&byte=549568&isize=M&twp=T029NR019W>

<sup>18</sup> Interestingly, although perhaps not significant, is the fact the letter to Marsh appears before the letter to Wiltse in the vol. C of Letters Sent.

<sup>19</sup> This diagram, and probably many others like it, are not available.

<sup>20</sup> Land Records, Record Group 81, Letters Sent, vol. C 1846-1848 p.156 Iowa State Archives.

<sup>21</sup> See below note 28.

<sup>22</sup> Bloom, John Porter (compiler and ed) The Territorial Papers of the United States. Vol. XXVIII The Territory of Wisconsin 1839-1848 pp.1094-1095. (Footnotes omitted)

<sup>23</sup> Presumably Scurry was, in fact, scurvy.

<sup>24</sup> Land Records, Record Group 81, Letters Received from Deputies, Box 06, Iowa State Archives.

<sup>25</sup> Wisconsin Public Land Survey Records, Original Field Notes and Plat Maps supra note 17 Book 152 p.13 Lake St. Croix was apparently 476 feet wide at this point. Interestingly, Marsh was not instructed to meander the lake although clearly it was navigable.

<sup>26</sup> Land Records, Record Group 81, Letters Sent vol. C 1846-1848 p.203 Iowa State Archives.

<sup>27</sup> Letters Sent by the Commissioner of the General Land Office to the Surveyors General, 1796-

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1901National Archives Microfilm M27 Roll 12 p.62.

<sup>28</sup> United States, Congress, Senate, Report from the Acting Secretary of the Treasury, communicating the annual report of the Commissioner of the General Land Office. December 13, 1847. S.Exec.Doc. 2 30th Congress, 1st Session Serial Set Vol. No. 504 pp.82-97.

<sup>29</sup> This perhaps explains why Marsh initially “skipped” running the Range line between 23 and 24 in T32.

## A GEOGRAPHY OF TOWNSHIP EXTERIORS IN MINNESOTA TERRITORY 1847-1852

Rod Squires, University of Minnesota

### Introduction

In the last article I described how deputy surveyor James M. Marsh established townships east and west of the St. Croix River in August and September 1847 under the General Instructions issued by Surveyor General, George W. Jones, in 1846.<sup>1</sup> Even before Marsh had finished his contract the Surveyor General had awarded contracts to other deputies to subdivide the townships Marsh had established and also to run additional townships exteriors between the St. Croix and Mississippi rivers. (Figure 1) Here, I complete the story of the townships established under the 1846 Instructions.<sup>2</sup>

Deputy	Contract Date	Survey Type	Date Carried Out	Appropriations
Henry A Wiltse	May 22, 1847	3rd Correction	Aug. 1847	March 3, 1847
James M Marsh	May 22, 1847		Aug. - Sept. 1847	March 3, 1847
J E Whitcher	Aug. 27, 1847		Oct. 1847	March 3, 1847
Theodore Conkey	July 28, 1848	4th Correction	Nov. 1848	Aug. 12, 1848
James E Freeman	July 9, 1849		Aug. - Sept. 1849	March 3, 1849
John M Smith	July 9, 1849		Nov. 1849	March 3, 1849
Theodore Conkey	Aug. 6, 1849		Nov. - Dec. 1849	March 3, 1849

Figure 1. Deputies Employed to Run Township Exteriors under the 1846 Instructions<sup>3</sup>

Except for the 3<sup>rd</sup> and 4<sup>th</sup> Correction Lines, which will not be described, all of the lines were run in 1847 or 1849. In his annual report for 1850, dated November 11, the Surveyor General was able to report that all “the Territory of Minnesota not owned and occupied by Indian tribes is surveyed into townships, comprising one hundred and forty-four townships, equal to 3,317,760 acres ....”<sup>4</sup> Township lines had been extended north to T49N, two township north of the 4<sup>th</sup> correction line, and from the St. Croix River westwards to the Mississippi.<sup>5</sup> (Figure 2) Some of these townships contained land that was in demand and so were subdivided fairly soon after they were established and then offered for sale. Some of the townships contained land for which there was less demand and so were subdivided several years after they were established – well after the surveys had spread across the Mississippi.<sup>6</sup> (Figure 3)

### Township Exteriors in 1847

On March 30<sup>th</sup> 1847 the newly appointed Commissioner of the General Land Office, Richard M. Young, wrote to Surveyor General Jones, directing him to award contracts to survey, “Township and section lines, on and adjacent to the St. Croix, that all lands in that region, which may be valuable for timber, may be brought into market as early as practicable.”<sup>7</sup> A few weeks later, on April 22, he wrote advising Jones of the amount he would receive from the appropriations made by Congress on March 3<sup>rd</sup> for the following fiscal year, from July 1, 1847 to June 30, 1848.<sup>8</sup> In his letter, he stated,

One of the deputies ... should be instructed to survey the Third correction parallel to the Mississippi River and complete his contract by the survey of the lands adjacent to the river and Lake St, Croix, and the balance of the \$17,000 of the appropriation apportioned to your District, with the balance that may remain after surveying the Fourth Meridian, of the \$5,000 apportioned to your District last year for that service, may also be used on continuing and completing, as far as practicable, the survey of those St Croix lands, which it is understood command a ready sale, when brought into market in consequence of the valuable timber growing on them.

The twenty eight thousand dollars apportioned to your District of the appropriations for surveying the public lands, should be divided between Wisconsin and Iowa as to secure the survey of the greatest amount practicable, of land, that will command a ready sale when brought into markets and thus advance the settlement of the country.

You should require your Deputies to make their returns as rapidly as possible; - and cause the Township plats to be prepared that the lands may be brought into market at the earliest practicable period, and in all your operations, and in the incidental expenses of your office, you will govern your expenditures by the most rigid economy.<sup>9</sup>

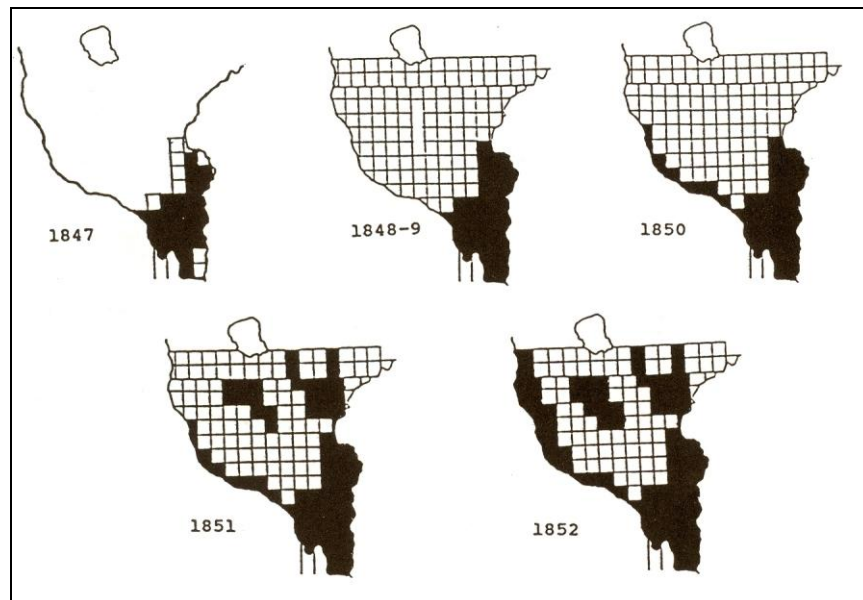


Figure 2. The Spread of the Surveys, 1847-1852.<sup>10</sup>

On August 5, 1847 the Commissioner wrote to Jones,

There is no doubt that the Deputies will have to undergo great hardship in surveying that region and on the 8<sup>th</sup> ultimo I wrote you extending all the relief to such cases within the power of this Office. It may be well to remark, however, that from the description given by Mr. Wiltse but a small portion of the lands in the region

traversed by him should be surveyed at this time, unless reported as valuable for Mineral by the Geological Surveyor. Where it may be necessary, to connect the surveys of detached bodies of valuable lands, the Township lines could be run of those which are comparatively (sic) valueless.<sup>11</sup>

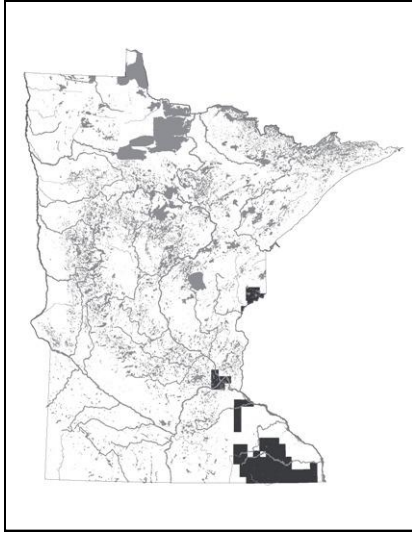
The Surveyor General wrote to the Commissioner on August 27, 1847 in response to a letter from him on December 18 the previous year,

I inferred ... that it was your desire to reach the pine lands of St Croix river by the Surveys of the present season. My anxiety to execute your instructions was if possible increased by the representations of the officers of the "Boston Lumbering Company" resident on the St Croix that the country in question was fast filling up with Settlers and that the pine timber, which gives to that region its great value, was very fast disappearing.

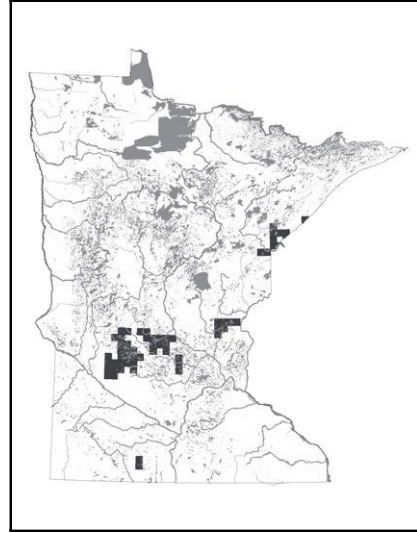
It was known, however that the Country bordering Lake St Croix & between that Lake and the Mississippi river, comprised a heavier settlement than any unsurveyed portion of my district. The township lines of this region were consequently contracted for, with the belief that they would reach the St. Croix pine lands. By intelligence, however, derived from H. A. Wiltse Esq. upon the return of his field notes of the Survey of the Third Correction line it appears that the valuable portion of the pine timber is much further north than was anticipated. Even the falls of St Croix river are north of the district of township lines assigned to J. M. Marsh Esq. and which it was my design to have put under contract for subdivision this fall. In addition to these is the fact, farther, that I am advised by Dr D. D. Owen United States Geologist for Wisconsin that a district of country immediately north of and adjoining the district now being run into townships by Mr. Marsh and lying equally upon either side of the St Croix river, is vastly important on account of its mineral character and recommends that it be immediately surveyed.<sup>12</sup>

He wrote that he had awarded contracts to establish townships on both sides of the St. Croix River north of the district assigned to Marsh in May and asked the Commissioner for additional monies to subdivide these and the townships established by Marsh.<sup>13</sup> He received a reply from the Commissioner on October 17, 1847, confirming that the timberlands on the St. Croix were to be surveyed but that there were no more funds available to carry them out.<sup>14</sup>

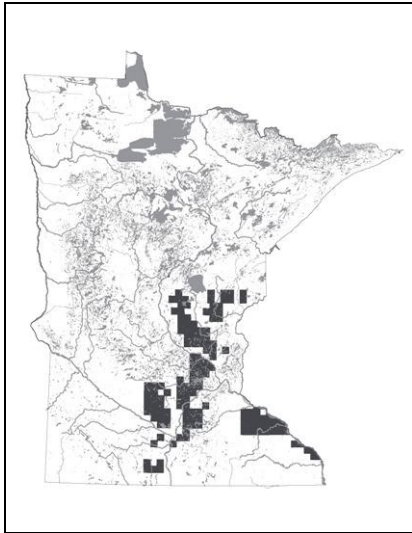
On August 27<sup>th</sup> 1847 the Surveyor General awarded Jeremiah E. Whitcher a contract to establish townships on either side of the St. Croix north of those established by Marsh earlier in the year.<sup>15</sup> His district of townships lay immediately north of those carried out by Marsh earlier in 1847. (Figure 4 W)



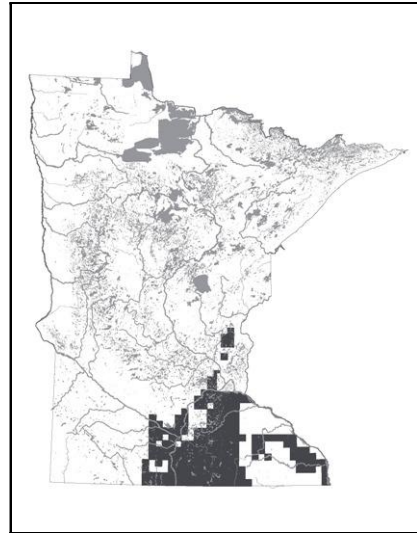
1853



1854

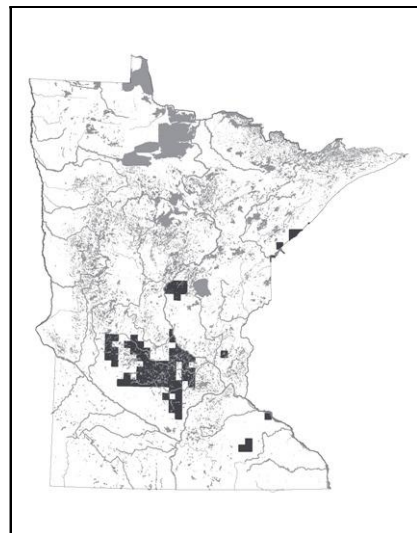


1855



1856

Figure 3 Completed Surveys 1853-1857. At the end of this period all townships established 1847-1852, except for the fractional townships around the south end of Mille Lacs, had been subdivided.



1857

On September 3<sup>rd</sup> 1847 the Surveyor General wrote to David Owen, who was then supervising the geological surveys being carried out, at Prairie du Chien,

I have just contracted with Mr. J. E. Whitcher for the survey of a district of Township lines North of and adjoining Mr. Marsh's and lying equally upon either side of the St Croix river, This contract embraces four Townships in depth and width as shown upon the enclosed Diagrams. Mr. Whitcher will commence operations in the field about the 5<sup>th</sup> Inst. This district has been let in compliance with your communication under date of 23<sup>rd</sup> of July last and tho' not as large as you suggested it is as nearly so as the means left at my disposal would permit.

I have also assigned for subdivision nearly all of the district now being surveyed into Township lines by James M. Marsh Esq. and also a district of five Townships with Mr. Whitcher's work as represented in red upon the diagram above alluded to.<sup>16</sup>

Whitcher completed his fieldwork in October 1847 too late to be noted in the Surveyor General's annual report for 1847 dated October 18. The work was reported in the following year's annual report also dated October 18. He returned his field notes February 27 1848 having run a little over 216 mile of lines. He was paid \$1,296.22.<sup>17</sup>

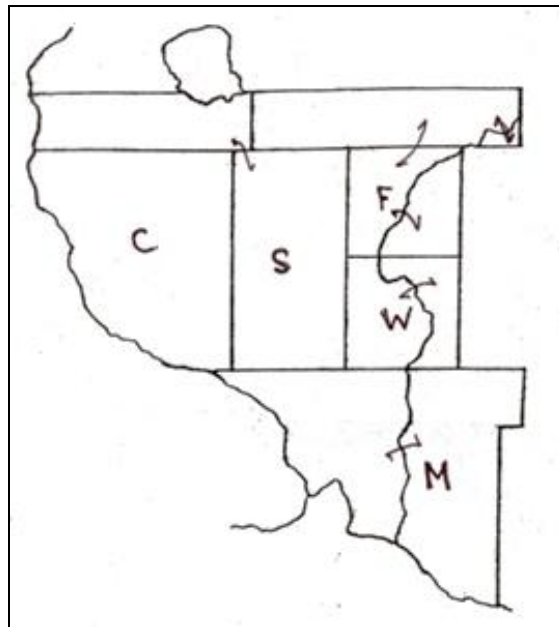


Figure 4. Districts of Townships Lines Awarded in 1848 and 1849 (see text for deputies represented)

### Township Exteriors in 1848

During the year the townships established the previous year were all subdivided. In his annual report dated October 18, 1848, Surveyor General Jones reported an “unexpected and

embarrassing delay from the peculiarly difficult and almost impassable character of the country,” in carrying out the surveys north of the 3<sup>rd</sup> Correction line and west of the 4<sup>th</sup> Principal Meridian.<sup>18</sup> He noted he had awarded a contract for the 4<sup>th</sup> Correction Line, “the establishment of which was indispensable to the survey of the copper lands on the south shore of Lake Superior, and of the country actually embracing the greater and better portion of the St. Croix pinery.<sup>19</sup> He complained about a lack of funds at his disposal. He had been given \$40,000,

The amount, I regret to say, is inadequate to the actual and pressing exigencies of the service and is ten thousand dollars less than I had thought myself at liberty to expect. The vast interest which the government has involved alone in the immediate survey of the Wisconsin lands, which are timbered by pine, as set forth in my last report, and based upon correct data – the fact that those lands are yearly depreciating in value to an amount equal to the whole cost of surveying them ....<sup>20</sup>

He argued vehemently for a larger apportionment of the Congressional appropriations for surveying for the next fiscal year.<sup>21</sup> Regarding the importance of the reports of the deputies establishing the townships he wrote,

The several deputies upon town lines have been required to submit a report on the character of each district, setting forth the progress and amount of settlement, as well as the inducements thereto, with each township. These reports are designed to supercede (sic) the necessity of discretionary contracts of subdividing, by possessing this office of information upon which an unhesitating decision can be made as to the townships which should be immediately subdivided.<sup>22</sup>

### **Township Exteriors in 1849**

On June 4, 1849 the Commissioner wrote to Jones regarding appropriations for the following fiscal year. He wrote,

Much anxiety has been manifested for the survey of the lands in Wisconsin, bearing valuable pine timber and that matter is referred to in your letter of the 15<sup>th</sup> ulto. enclosing a communication from A Warren Jr. Esq. In relation to this subject, I would suggest that where bodies of land of this character have been settled it would be well to have them surveyed, and for this purpose where they are not too remote from lands already surveyed, that a paralel (sic) or meridian should be continued, establishing the Section and Township corners thereon til (sic) those bodies are reached, when they could be subdivided into Townships and Sections the basis established by the line thus continued. In doing this however, much care must be exercised not to trespass on lands of those Indians under authority from the War Department, or which have not been ceded, and the running of such connecting lines should be confided only to your most careful & competent surveyors as upon their accuracy will necessarily depend the proper position of such detached surveys.<sup>23</sup>

On July 9, 1849 the new Surveyor General, Caleb Booth, awarded a contract to James E. Freeman, to establish townships north of those established by Whitcher two years earlier and

also a tier of townships north of the 4<sup>th</sup> Correction line run by Theodore Conkey the previous year.<sup>24</sup> (Figure 4 F) Booth gave the following Special Instruction to Freeman on July 9 1849,

By your contract of this day, you are to establish the lines between Ranges 18 & 19, 19 & 20, 20 & 21, & 21 & 22 of Townships 37, 38, 39, & 40 & between Ranges 16 & 17 to 24 & 25 inc of Townships 41 & 42, the lines between Tows. 37 & 38, 38 & 39 & 39 & 40 of Ranges 18, 19, 20 & 21 and between Towns 41 & 42 & 42 & 43 of Ranges 17 to 24 inc. In addition to the above you are hereby authorized to survey the boundaries of not more than two townships situated upon the St. Croix river at the same price, in the same manner & under the same restrictions as are provided or that may be hereafter be provided for the survey of the district for which you have this day contracted, the said townships to adjoin each other & one or both to adjoin your district aforesaid, upon condition that the St. Croix river after leaving your district is bordered by valuable pine timber, especially if the timber is being cut or is occupied or claimed. And it is further understood that, if the said river crosses the north boundary of said township 42 you are to survey the township lying immediately north of and adjoining that township only.

The price paid you for this work contemplated great difficulty in transporting your provisions, the impossibility of running by the needle & a surface interspersed with marshes, swamps and lakes but it is deemed sufficient to secure as accurate a survey of the lands of your district as though they were situated within the prairie and openings of Iowa. This fact is presented to you and ... (missing the remainder)<sup>25</sup>

Freeman returned his notes probably in late 1849. Booth noted Freeman's account, along with the plats of his surveys, were sent to the Commissioner of the General Land Office on February 8, 1850.<sup>26</sup> Freeman had run approximately 407 miles and received \$3,256.31 for his efforts.<sup>27</sup>

Deputy Freeman wrote to Booth on February 2, 1850,

The district of township lines with the survey of which I have the honor intrusted (sic) by you on the 9th of July last, is timbered as nearly as I can estimate as follows: One sixth by White, Yellow and Pitch pine, five sixths of which is unfit for lumber; one sixth by Aspen; one sixth by White & Yellow Birch; one sixth by Balsam and one third by Tamarack, Spruce, Lind, Elm, Ash, Oak & Ironwood, their prevalence following the order here named. The pine is so interspersed among other timber as to be of difficult access – in deed two sections could scarcely be found upon which the pine is sufficiently dense to employ a company of “logger” one winter.

Township 41 of Ranges 17 & 18; Townships 41 & 42 of Ranges 20 & 23 and Twn S 37 & 38 of Range 18 contain the most and best pine, are adjacent to streams of sufficient size to float logs and portions I have no doubt of those townships would sell if immediately surveyed & brought into market. I say immediately, because much of the Pine has already disappeared and much more will disappear this and every succeeding winter before the companies of “loggers” who make a lodgment

wherever they can find a grove or skirt of this timber of such size as to occupy them during the winter.

Townships 37, 38, 39 & 40 of Ranges 20 and 21 except the Tamarack and spruce swamps which are abundantly interspersed through them, possess a dry cultivable soil and should on that account, I think, be surveyed.

The townships not enumerated above would not sell if brought into the market & therefore I think should not be surveyed.<sup>28</sup>

On the same day the Surveyor General awarded a contract to John M. Smith to establish townships in two districts, one to the west of those established by Witcher and Freeman and the other north of the 4<sup>th</sup> Correction line. (Figure 4 S) In the Special Instructions to Smith dated July 9 1849, he wrote,

... you are to establish the lines between Ranges 22 & 23, 23 & 24 & 24 & 25 of Towns from 33 to 40 inc and the lines between towns 33 & 34 to 39 & 40 inc of Ranges 22, 23 & 24 ... lying north of the Fourth correction line, south of the line dividing Towns 43 & 43, west of the line dividing Ranges 24 & 25 and east of that main channel of the Mississippi river.<sup>29</sup>

Interestingly he advises Smith,

In establishing the western boundary of this district you will please to leave your (temporary) six mile posts standing in all instances where you do not intersect at post, for the use and convenience of a Deputy who will have a district of township lines adjacent to your upon the west.<sup>30</sup>

Smith returned his notes after the Surveyor General had written his 1849 annual report so his work was reported in the annual report of 1850.<sup>31</sup> He ran approximately 420 miles of line and received \$3,391 for his work.<sup>32</sup>

Jones sent copies of the bonds, contracts, and special instructions given to Freeman, Smith and several other deputies to Commissioner Butterfield on July 27 1849. In a letter accompanying the documents he noted that he had assigned a district of townships to Theodore Conkey. (Figure 4 C) He also wrote

To the execution of the contracts of township lines in Minnesota, the most serious obstacles are presented. Lakes & ponds, deep mirey marshes, swamps dens with limbs and brush and strewn with fallen timber upon which the standing timber has grown, sending their bare or moss covered roots on either side of the trunk underneath them (thus rendering a footing almost impossible) characterizes the region.

Interspersed (sic) however, and bordering the larger streams and in most instances the lake also, are found belts of good white and yellow pine timber. These township

lines have been let an eight dollars per mile – the least rate at which it is believed an accurate survey can be made.<sup>33</sup>

Subsequently, in his annual report, dated October 18 1849, he described the surveys that had taken place following the Commissioner's instructions of July 2 the previous year.<sup>34</sup> He wrote,

These instructions required such an expenditure of the amount apportioned to this district as would secure the survey of those lands in Wisconsin, Iowa, and Minnesota, which would accommodate the largest number of settlers, and command the most ready sale when brought into market.

Eleven hundred miles of township lines have been contracted for in the Territory of Minnesota, east of the Mississippi, covering nearly all the ceded land within this Territory. The detailed report that are to be submitted with the returns of these township lines will accurately defined the limits of such tracts upon Rum River, and upon the St. Croix and its tributaries, as are timbered by pine, and will determine the location of settlements which, judging from the emigration of the present season in that direction, must e extensive and rapidly increasing.<sup>35</sup>

He reiterated what his predecessor stated about the utility of the exterior deputies' reports in awarding contracts to subdivide the townships,

a report of the deputies upon township lines as to the particular character of their respective district, and of the extent and progress of settlements thereon, has been of great assistance in enabling me to determine upon the townships that should be earliest subdivided. The track of emigration and settlement, as indicated in these reports, or as otherwise satisfactorily determined, has been a guide to the subdivisions.<sup>36</sup>

He worried that surveying only those lands in demand might leave “isolated townships unsurveyed” but argued that was far less objectionable than surveying unsettled and unsalable lands.<sup>37</sup> He wrote that the surveys for the following year,

will consist in subdividing such townships (the boundaries of which are now being run) as are settled, or which are covered by valuable timber. Should the report of the deputies engaged upon these township lines sustain the representations which prompted their expectations, a just amount of the next apportionment can be advantageously employed on this work.<sup>38</sup>

On August 6, 1849 Booth awarded a contract to Theodore Conkey, fresh from surveying the 4<sup>th</sup> Correction line, to establish townships adjacent to the Mississippi River. (Figure 4 C) In the Special Instructions Booth wrote,

By your contract of this date you are to establish all the proper township boundaries of & within the following district situated within the following district situated north of the Base line and west of the Fourth Prin. Mer. in the Terry of Minnesota, viz:

North of the line dividing townships 32 & 33, West of the line & east of the main channel of the Mississippi river.

The price you for this work contemplates great difficulty in transporting you provisions, the impassibility of running by the needle and a surface interspersed with marshes, swamps and lakes, but it is deemed sufficient to ensure as accurate a survey of the lands in your district as though they were situated in the prairies and openings of Iowa. This fact is presented you against leaving any portion of your work in an imperfectly finished condition. As the object of this survey is to bring into market the valuable pine timber growing upon your district you are hereby required carefully to note the points where your lines intersect & leave all bodies of valuable pine timber however great or small: a brief description of which should be given at the end of the notes of each mile upon which pine occurs.

You are to establish meander corners upon all such rivers, lakes, ponds, Island, bayous & sloughs as subserve the public interest by being meandered or that will thereby tend to facilitate the sale of the adjoining lands.

In your exercise of this discretion you will please to bear in mind that the interests of a lumbering country is greatly promoted by the free and unobstructed navigation of all streams of sufficient size to float rafts or parts of rafts or even logs.

In closing to the Fourth correction line you are if practicable, to take four bearing trees, all of which, however, must stand south thereof.

In marking lines and establishing corners great care must be exercised and such portions thereof as are not executed by yourself, should be if practicable personally inspected by you, as it is upon this evidence alone that the settler usually depends in locating and entering his land.

Herewith you are furnished a diagram representing the lines you are to run, and the topography, magnetic variation and closing of & corners upon all the lines which have been previously established and which adjoin your district.

With your field notes of this survey you will please to submit a report upon the extent of settlement and character of improvement within each township of your district. You will also report upon the general character of your district in respect to the proportionate quantities of pine and other timber.

You will further report a list of such townships as in view of their inducements to purchasers should be earliest subdivided: also a list of such as probably will not sell if subdivided.

A faithful attention to the subject; to be embraced in this report, will be of great service in directing the subdivision of your district.

Of your survey you are to make advance return, in order that the valuable lands of that portion thereof, may be subdivided before the coming of winter. These returns should embrace about one half of your district and should, if possible, be received here by the first of September next. With these returns you will please to submit a report of the character just above mentioned.

You will please bear in mind that your survey is out of an appropriation for surveying with reference to mines and minerals and that it is to be conducted in cooperation with the geological examination, to facilitate which you are to use every exertion in your power, should your aid be solicited.<sup>39</sup>

Conkey returned his notes in early 1850 and his account and the plats were forwarded to the Commissioner in June and August 1850.<sup>40</sup> He ran approximately 560 miles for which he was paid \$4,451.<sup>41</sup>

### **Township Exteriors in 1850**

On January 28, 1850 John M. Smith wrote to Booth

In obedience to Special instructions from you dated at your office on 9th of July AD 1849 in the City of Dubuque – I would beg leave to submit the following.

First – there are two or three small farms which are under cultivation in Township 38 North, Range 32 West. And also two or three cabins with small improvements in fractional Townships 41 North Range No 32 West, which is all of the improvements and settlements that have come under my observation within my district.

Second – fractional Township 41 & 42 North of Range 32 West should be earliest subdivided as they are valuable for farming purposes and if brought into market will probably sell.

Third – Townships 38, 39 & 40 or Ranges 22, 23 & 24 have some valuable Pine timber lumber growing upon them and if subdivided and brought into market, probably there will be some portions of said land sold in a few years.

Fourth – the remaining portions of my district if subdivided probably will not sell for many years. Townships 33, 34, 35, 36, 37, 38 & 39 North of Ranges 22, 23 & 24 West – have a great number of cranberry marshes within them and upon the high ground are great quantities of Whistleberries.<sup>42</sup>

Conkey was criticized for performing defective work. He defended himself against the complaints in a letter to the Surveyor General, Caleb Booth, on April 1, 1850 by referring to some of his difficulties, implying that the deficiencies in his work were not problematic since the land he surveyed was worthless.<sup>43</sup> He wrote

After a protracted delay of months I send to your office the Field Notes of the survey of my District in Minnesota. The cause of this long delay has been a severe attack of inflammatory rheumatism which has rendered me helpless from the second week after my return home until within a few days since.

I am still unable to travel, hence I am compelled to use the mail as the only means of transmitting. I had to encounter countless difficulties and embarrassments in the process of my work which I have never before had to contend with. After the water becomes cold and the weather severe I had great difficulty in keeping a party together. The survey of the North Eastern part of the district is badly surveyed and had I thought as much of it before leaving the country as it has distressed me since I certainly should correct it. I will however hold myself ready to make the correction should you think proper to advise it. It was so near the Correction Line and the country entirely valueless and being wholly destitute of supplies I passed over it with too little forethought for my own good or reputation.

There is no necessity for sectionalizing any part of the district excepting that portion lying immediately upon the Mississippi and Road from Saint Paul to Fort Gaines (now Camp Ripley). No benefit could possibly ever come to the Government by subdividing any more than the fractional townships along the river.

Considerable pine exists along Rum River but generally of inferior quality. Meander corners were established as far up as it was thought possible for a board raft to run. The anxiety to forward my notes has induced me to omit their platting and mapping, as it would require too much delay in my present enfeebled condition to do it.

You will please direct my draft or Warrant to be made payable at the Land Office at Dubuque and sent to me at Appleton, Brown County, Wisconsin.<sup>44</sup>

The Surveyor General wrote to Conkey, then in Grand Chute Wisconsin, on April 30, 1850.

Your survey of township lines under your contract of the 6<sup>th</sup> of August last, as reported in the field notes recd. with your letter of the 1<sup>st</sup> inst, is inadmissible.

Your closings are often out of limits and in some instances to a surprising extent, while your intersections of your own correction line, are at wonderful variance both with them and practice. Whether any portion of your work can be adopted, will be left an open question for the present.

You are therefore requested to repair to this office, in preparation for the field, immediately. Should your health or other causes not permit you to comply with this request, you will please so to advise me without delay.

The completion of your work has long been and must continue to be a subject of great moment to this office. Its correctness is intrusted (sic) to you under an

undiminished confidence in your integrity and ability and a firm assurance that no avoidable delay will be suffered.

Please to submit your compass and chain for inspection.<sup>45</sup>

On June 24, 1850 Booth wrote about Conkey's surveys to the Commissioner Young,

Early in July last, and immediately upon receipt of my instructions for surveys in 1849, I assigned Theodore Conkey Esq. – a tried & esteemed deputy of his office-, a district of township lines in the Terr. of Minnesota. The part of this district skirting the Mississippi from its high inducements to settlement, demanded early survey, to enable me to accomplish which, Mr. Conkey was required to make an advance return of his surveys and to prosecute his work as rapidly as accuracy would warrant.

A westwardly bend of the river, of which this office had no knowledge, caused his district to exceed its estimated size, by about one hundred and fifty miles, and protracted its execution beyond the period at which an advance return was required and to a period when it was impossible to make one – thus defeating he purpose of subdividing in 1849, the skirt of country noticed above.<sup>46</sup>

All his supplies had to be packed in upon men's backs and such were the obstacles encountered that progress was next thing to impossible. His assistants twice "struck" for higher wages and twice deserted him refusing to work for any wages – causing him to suspend work until their places could be filled from the settlements, outside his district.

He completed his survey about mid winter and returned home to be immediately attacked with acute rheumatism which, although repeatedly urged by this office to make return of his work, effectively prevented his doing so until the 24<sup>th</sup> of April last. His notes were found to be inadmissible of which he was immediately advised and will be seen by the enclosed copy of a letter of the subject. He replied that his health had greatly improved and that he would be at this office in a very few days, but was unavoidably detained to the 17<sup>th</sup> ins. He has now taken the field to correct that portion of his work not accepted & is expected to compete the same in about two months.

Until Mr. Conkey's surveys were received no definite information was had in relation to the size of his contract, further than it have greatly exceeded the preliminary estimate; hence, until then, it was not known with sufficient certainty, whether the amount left at my disposal would justify any other that the surveys contracted for on the 22d inst, the execution of which was of primary importance. Upon the reception of his work it was perceived that there would be \$1500 or \$2000 applicable to important surveys in Iowa, and the contract of the 30<sup>th</sup> ultimo, was accordingly entered into.<sup>47</sup>

In the Surveyor General's annual report for 1850 dated November 11, 1850, Booth noted,

The primary object of the surveys, both in Wisconsin and Minnesota, was, in the former to bring to market, and in the latter to define the locations and boundaries, of the pine-timbered lands. This object is fully accomplished, though the result is not as favorable as was anticipated by this office, and does not sustain the estimates elsewhere made of the quantity of this timber existing upon these lands.<sup>48</sup>

This was not the end of the problems with Conkey's surveys. On June 2 1851 Sargent awarded Joseph Marshall a contract to subdivide five townships; T 40N-38N R 27W and T40N-39N R28W, which required he resurvey several lines run by Conkey; the North line of T40NR26W, part of the West line of T39NR26W, and the West line of T38NR26W.

On July 7, 1851 the new Surveyor General, George B. Sargent, wrote to Commissioner Butterfield,

Messrs Higbee, Anderson, & Marshall, to whom were assigned contracts of subdivision in Minnesota, have abandoned their work on account of the erroneous execution of the Township line surveys. These errors according to the report of Messrs Higbee Anderson and Marshall and Mr. Wiltse, my examining assistant, consists of mistallies, erroneous distances across lakes, a general inaccuracy and want of uniformity of measurement, crooked lines, and frequent occurrence of marked lines connected by offsetting therefrom to supposed true lines without obliterating corners upon the old or blazing the new lines. Were it not for the fact that part of the district of Town lines surveyed by Mr. Conkey has already been subdivided by Mr. Ryan and the errors existing in said Townships thereon to the North and West in each case I would unhesitatingly recommend a re-survey of the whole district assigned to Mr. Conkey. The cheapest and best mode of correcting the errors will be to authorize the subdividing deputies to make the necessary corrections at a stipulated rate per mile. I have extended the time of completion to Messrs Higbee & Anderson & Marshalls contracts to 1<sup>st</sup> December next.

They will take the field about the first of September. Will you inform me at an early day if the manner proposed for the corrections of surveys as above mentioned meets your approbation, and also what rate per mile would I be allowed to pay for said corrections?<sup>49</sup>

A few months later, on September 24 1851 Sargent awarded a contract to Daniel Higbee to subdivide six townships, T40N –T37N R26W and T37-38N R25W and to resurvey several lines run by Conkey. He resurveyed the South line of T40NR26W, the East line of T39NR26W, part of the East line of T38NR26W, and the South and part of the East line of T37NR26W.<sup>50</sup>

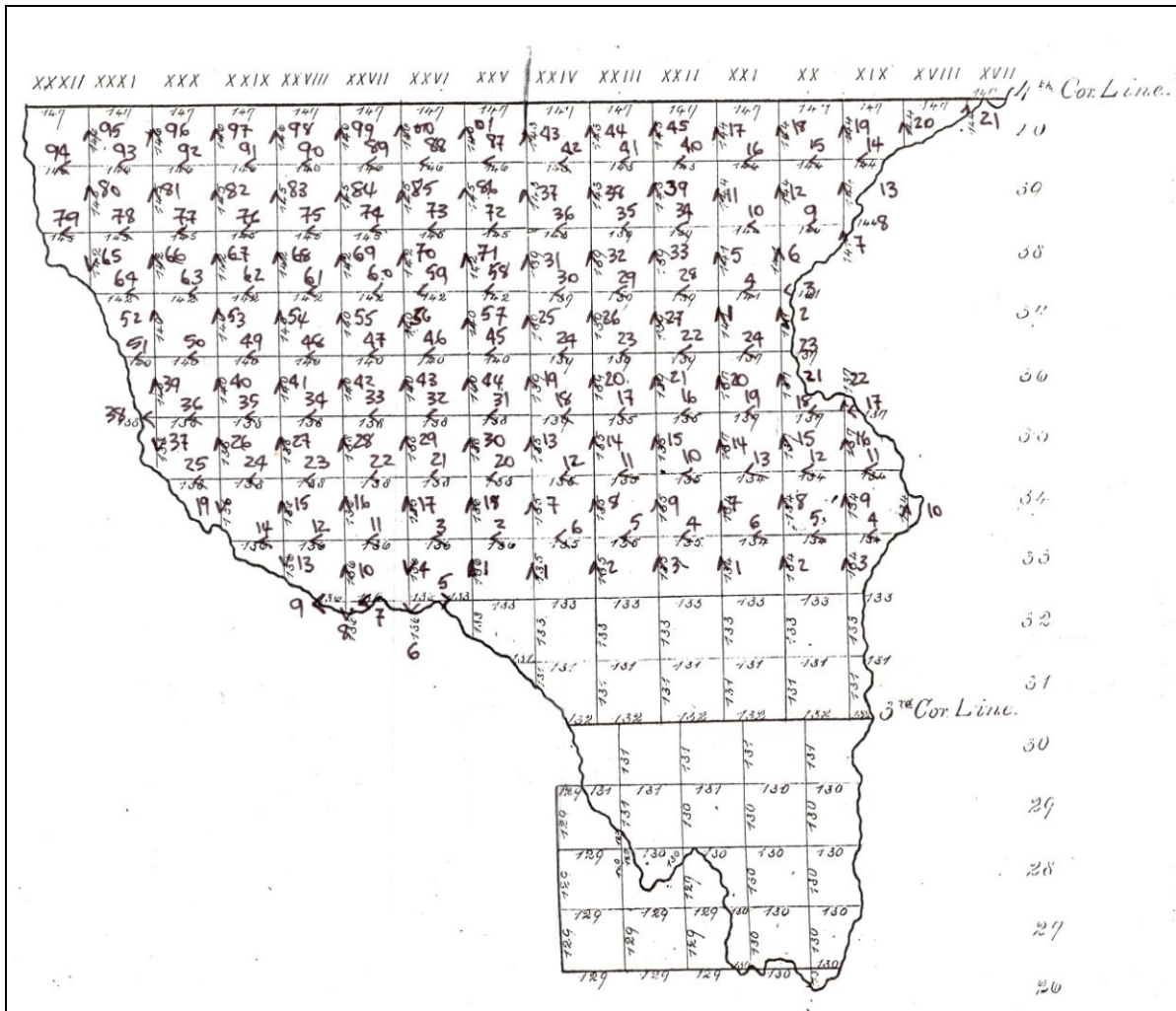


Figure 5A A Diagrammatic Representation of the Lines run by Whitcher, Freeman, Smith, and Conkey, see Figure 4 for the Districts surveyed by each deputy. (Arrows refer to directions and numbers refer to the sequence of the line segments) The numbers printed in the townships refers to the volume number of the Field Notebook.



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at the Minnesota History Center, cataloged under Secretary of State.

130	James M. Marsh 1
131	James M. Marsh 2
132	Henry Wiltse
133	James M. Marsh 3
134	J. E. Witcher 1
135	John M. Smith 1
136	Theodore Conkey 1
137	J. E. Witcher 2
138	Theodore Conkey 2
139	John M. Smith 2
140	Theodore Conkey 3
141	Jas E Freeman 1
142	Theodore Conkey 4
143	John M. Smith 3
144	Jas E. Freeman 2
145	Theodore Conkey 5
146	Theodore Conkey 6
147	Conkey "correction"
148	Boundary Survey
149	William Burt
150	Jas E Freeman 3
151	John M. Smith 4
152	John M. Smith 5
153	Jas E. Freeman 5
154	Jas E. Freeman 6

<sup>4</sup> United States, Congress, Senate, General Land Office, Annual Report for 1850. S. exec. doc. 2 31st Congress 2d session. Serial Set 588 p.45

<sup>5</sup> For the annual report, see Squires, Rod "The public land surveys in Minnesota, 1847-1852." Disclosures Winter 1993 pp.10-17. The townships adjacent to the boundary line between Minnesota Territory and Wisconsin, could not be established because the lines were to close against the boundary, a line that was not drawn until 1852.

<sup>6</sup> Some of the townships established under the Instructions of 1846 were subdivided under the General Instructions of 1851 and some even under the General Instructions of 1855.

<sup>7</sup> National Archives Microfilm M27 Letters Sent by the General Land Office to the Surveyors General, 1796-1901 Vol.12 p.62.

<sup>8</sup> The letter in which the Commissioner informed the various surveyors general what money he was giving them to carry out the surveys in their respective surveying district has often been called "annual instructions." The amount he awarded was his response to the annual reports the surveyors general had sent him the previous year.

<sup>9</sup> National Archives supra note 8 pp.80-82.

<sup>10</sup> Reproduced from an earlier article, see supra note 4.

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<sup>11</sup> National Archives supra note 8 p.145. Henry Wiltse had run the 3<sup>rd</sup> Correction line westwards from the 4<sup>th</sup> Principal Meridian to the Mississippi River, see Dahl, John R. United States General Land Office Historical Surveying Instructions and their Influence on Surveys of the 3rd and 4th Correction Lines, 4th Principal Meridian, Minnesota (Unpub. MS thesis, St Cloud State University, 2006)

<sup>12</sup> Bloom, John Porter, The Territorial Papers of the United States Vol. XXVIII The Territory of Wisconsin (Washington DC. The National Archives, 1973) pp. 1094-1095.

<sup>13</sup> Id.

<sup>14</sup> National Archives supra note 8 p.177

<sup>15</sup> Whitcher, who had previously surveyed run parts of the 1<sup>st</sup> and 2<sup>nd</sup> Correction lines and both established and subdivided townships in Iowa.

<sup>16</sup> Iowa Historical Society, US Surveyor General. Letters Sent Vol. D p. The diagram mentioned in the letter has not been seen.

<sup>17</sup> United States, Congress, Senate, General Land Office, Annual Report for 1848. S. exec. doc. 12 30th Congress 2d session. Serial Set 539 p.114

<sup>18</sup> Id p.104

<sup>19</sup> Id. p.107

<sup>20</sup> Id. p.108

<sup>21</sup> Id

<sup>22</sup> Id. p.109

<sup>23</sup> National Archives Microfilm M27 Letters Sent by the General Land Office to the Surveyors General, 1796-1901 Vol.13 pp.155-156.

<sup>24</sup> Freeman had also worked previously in Iowa.

<sup>25</sup> Iowa Historical Society, US Surveyor General, Letters Sent Vol. D p.93

<sup>26</sup> United States, Congress, Senate, General Land Office, Annual Report for 1850. S. exec. doc. 2, 31st Congress 2d session. Serial Set 588 p.53. In the tables contained in the Surveyor General's annual report was recorded either the date the deputy returned his notes to the Surveyor general's office or the date they and the plats were sent to the Commissioner of the General Land Office in Washington DC.

<sup>27</sup> Id.

<sup>28</sup> Id. p.59

<sup>29</sup> Iowa Historical Society, US Surveyor General. Letters Sent vol. D p.76

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<sup>30</sup> Id.

<sup>31</sup> United States, Congress, Senate, General Land Office supra note 27. p.53

<sup>32</sup> Id

<sup>33</sup> Iowa Historical Society, US Surveyor General. Letters Sent Vol. D p.125-126

<sup>34</sup> These instructions have not been found

<sup>35</sup> United States, Congress, Senate, General Land Office. Annual Report for 1849. S. exec. doc. 1, 31st Congress 1st session. Serial Set 550 p.233.

<sup>36</sup> Id.

<sup>37</sup> Id.

<sup>38</sup> Id. p.236-237

<sup>39</sup> Iowa Historical Society, US Surveyor General. Letters Sent vol. D n. p.

<sup>40</sup> United States supra note 27 p.53

<sup>41</sup> Id.

<sup>42</sup> Iowa Historical Society, US Surveyor General. Letters Received. I do not know what “Whistleberries” are.

<sup>43</sup> Dahl, supra note p.56

<sup>44</sup> Id.

<sup>45</sup> Iowa Historical Society, US Surveyor General. Letter Sent Vol. D p.261

<sup>46</sup> The “westerly bend” presumably included the lands in T32 -35N adjacent to the Mississippi where Conkey seemed to please himself which direction he went along line segments. There were a number of corrections made to Conkey’s notes but at the moment I have no further information about them except for those completed by Higbee.

<sup>47</sup> United States supra note 27 p.58

<sup>48</sup> United States supra note 27 p.43

<sup>49</sup> Iowa Historical Society, US Surveyor General. Letters Sent vol. D p.573

<sup>50</sup> All of these resurveys were in the north-east part of the district surveyed by Conkey, the part he admitted was not well surveyed. In the field notebooks the term “corrected” is often used. Sargent makes no mention of the resurvey in his annual report and I have not found any instructions to Higbee although, I suspect, there are some.

## STANDARD PARALLELS AND GUIDE MERIDIANS IN WESTERN MINNESOTA

Rod Squires, University of Minnesota

### Introduction

In two previous articles I described how deputies established townships in the area between the St. Croix and Mississippi rivers, under the General Instructions issued by the Surveyor General of Wisconsin and Iowa, George W. Jones, in 1846.<sup>1</sup> These surveys continued those that had spread across Wisconsin and used the initial point, established by the intersection of the 4<sup>th</sup> Principal Meridian and a Baseline that coincided with the Illinois-Wisconsin boundary, as a reference.<sup>2</sup> I now turn my attention to the first townships established west of the Mississippi River, surveys that continued those that had spread across Iowa and used the initial point, established by the intersection of the 5<sup>th</sup> Principal Meridian and a Baseline in Arkansas, as a reference.<sup>3</sup>

First, however, I have to describe important changes in the way in which future surveys would be carried out, changes that were implemented before any surveys took place in Western Minnesota.<sup>4</sup> In 1852, the Commissioner of the General Land Office, John Wilson, sent George B. Sargent, the Surveyor General of Wisconsin and Iowa, copies of the Oregon Manual and directed him to follow the instructions contained in it.<sup>5</sup> In 1853, the new Surveyor General, Warner Lewis, was also directed to use the Oregon Manual and it was Lewis who started the surveys in western Minnesota.<sup>6</sup> These changes involved the construction of two new lines, standard parallels and check meridians, that created a framework for all future surveys in Western Minnesota.<sup>7</sup> Here I describe some of the correspondence between the Commissioner of the General Land Office, John Wilson, the Surveyor General, Warner Lewis, and the deputy who was awarded the contract to establish the lines, Elisha Norris. In the next article I will describe the problems Norris had carrying out the contract.

The Manual introduced standard parallels, lines running parallel to the principal base line at regular intervals “to provide for or counteract the error that otherwise would result from the convergency of meridians” and “to arrest error arising from inaccuracies in measurements.”<sup>8</sup> Such lines lying north of the baseline were to be run every four townships or 24 miles. Each would serve three functions: as a base for township exteriors running north of them; as a line against which township lines coming from the south would close; and, of course, as a township exterior.<sup>9</sup> Each would be marked with standard corners, corners from which township and section lines would run northwards, and with closing corners, corners created by lines projected from the south.<sup>10</sup> The Manual stated that they would be run “in advance of the contiguous surveys” but made provisions for what happened if townships were established before the standard parallel was run.

In a letter to Sargent, dated July 10, 1852, which accompanied “sundry” copies of the Manual, the Commissioner of the General Land Office stated the purpose of the lines,

It is desirable and highly important to obviate the necessity, wherever practicable to do so, of having double corners established on township lines except where they close on a Standard Parallel. To effect such purpose demands that the Standard Parallels should be sufficiently near each other. A distance of four townships or twenty four miles

between such parallels, North of the Base line, has been prescribed for the public surveys in Oregon, and whenever new standard parallels have been run elsewhere there is no reason perceived why the same regulation may not, with good advantage be adopted for the purpose of avoiding the perplexity of double corners to the utmost degree practicable – restricting that necessity to those parallels. Whenever the surveys shall be undertaken north of the Northern boundary of the state of Iowa Standard Parallels at the distance of four townships apart will have to be adopted, for all that region of country. How far it will now to be practicable to adopt such standards elsewhere, in your surveying district, if at all, is a subject of enquiry, to which I would invite your immediate and most serious attention, before instructions for new surveys shall have been received by you. Herewith transmitted are sundry copies of the manual of Instructions to Deputy Surveyors in Oregon, with copies of the Illustrations connected therewith, Copies of the diagrams of the surveys made, in progress, and proposed in Wisconsin, Iowa, and Minnesota, which accompanied your late annual Report, and also herewith transmitted, and on them are indicated by red lines the “Standard parallels” proposed for future adoption in Minnesota, at intervals of twenty four miles, and those elsewhere are proposed for your consideration, all with a view to dispense with double corners, every where, to the greatest degree practicable.<sup>11</sup>

The letter also introduced the “check meridians”, north-south lines which would serve as township exteriors but run before standard parallels in order to provide “a check on the(ier) true geographical position”.<sup>12</sup> Commissioner Wilson wrote,

It is moreover proposed ... to project an adequate number of check meridians, on which the corners of future surveys, to start therefrom, will be duly established. Such meridians, to be established prior to running the Standard Parallels, will be made to operate as a check on the true geographical position of the same – and such meridians, to great extent, may also be made to govern the surveys on both sides of them; for in surveying towards a check meridian, on which the corners are preestablished, whenever the closings can be made by course lines to the preestablished corners, without at all disfiguring the surveys, double corners can thereby be avoided; Nevertheless in cases where the departure from the cardinal points would be too great so to admit, double corners will be unavoidable. By these methods, it is thought, to restrict the absolute necessity for double corners within the smallest possible limits.

The check meridians suggested are illustrated on the accompanying diagrams. While the principle is commended to your most careful consideration, the detailed mode of applying the same to revision or amendment, where you may find good reason to suggest such.<sup>13</sup>

How these “check meridians,” now called “guide meridians,” were to be run in West Minnesota was more precisely described in the Commissioner’s letter to the new Surveyor General, Warner Lewis, the following year on May 16, 1853,

It seems to be advisable that a Guide Meridian (which we will call number one) should be run from the Northern boundary of Iowa to the Mississippi River, starting from the

dividing line between ranges seventeen and eighteen West, so as to strike the Mississippi river somewhere in the neighborhood of Fort Snelling. Another guide meridian (number two) should start from the boundary line, where the same is intersected by the line between ranges twenty-four and twenty-five West.

It seems also advisable that another guide meridian (number three) should be started from the said boundary from a point that would certainly clear the Mississippi River when extended to the Crow Wing River and beyond.<sup>14</sup>

Later in the letter, the Commissioner stated,

It is believed that the guide Meridian, number three starting from the Iowa boundary from the corner between ranges No. 31 & 32 would certainly be found to run to the West of the Mississippi river, (however imperfect our present maps may be found) and secure all the important points without the hazard of interfering with the Indian Reservations at the Waraju.

Until you should be in possession of information which would lead to other conclusions, you will consider yourself instructed, first, to enter into contracts for running guide Meridians 1 & 2, from the starting points suggested, the former to the Mississippi river, or terminating at the southern boundary of the special survey of the reduced military reservation in the neighborhood of Fort Snelling should it be found to strike the same before reaching the Mississippi, and the latter terminating at the Mississippi, to regulate the survey in the valley of Crow river, and distant forty two miles from the former.

On these guide Meridians, the township, section, and quarter section corners are to be established after the methods prescribed for the Oregon surveys; and such meridians to regulate the subsequent surveying operations, are to be run with the aid of the Burt's Solar Compass, and with the greatest possible care and precision chained with great accuracy, and the corner boundaries, whether mounds or posts, established and identified in the best and most enduring manner. The township surveys will start from the appropriate correction line as their practical base, and be closed on the one above it. The distance to which any one correction line is to be run out, at a single operation under a contract, is to be determined by circumstances. It may be run to the extent of one, two, three, four, five, six, or seven townships according to the locality of the body of land to be reached, and which it is desired to township and subdivide from it, as the practical base. Neither is it indispensably necessary to run the exteriors of all the four townships in width between any two correction lines at a single operation under any one contract. The township exteriors may be extended either one, two, or three townships north of a correction line leaving the residue for a future operation.<sup>15</sup>

He continued,

It is all important that the guide meridians 1 & 2 should be started as soon as possible.

The starting of the correction lines must be so managed as to provide for the

townshipping and subdividing of the lands in those special localities where the settlements most abound, so as to accommodate as far as we can, the greatest number of settlers, at the earliest period, making the existing appropriation available to the greatest practicable extent.

Starting from any township corner on a standard parallel, or correction line previously established, the township, or townships on the north, and between it and the correction line, above, will be laid off, on the Oregon method, according to diagram A.<sup>16</sup>

And later, he wrote,

The correction line may start from any fourth township corner station on the Meridian, and be run either to the East of it or to the West, according to circumstances so as to embrace the locality which it is particularly desired to have townshipped in advance of the great body of the surveys; and the facility thus afforded for so doing, will enable your Deputies to operate simultaneously on a number of township surveys, however detached from each other; and hence, by a conscientious observance by each deputy of all the principles prescribed, the whole work (detached as it may be in the first instance) ought and will ultimately be found to harmonize and fit together, with the entire connected surveys have been completed in the Territory.

In prairie regions where mounds have to be constructed to signalize the corner boundaries, it is all important that the surveys be made before the frost set in, otherwise the mounds will not endure.

On the map herewith transmitted will be found laid down, the lines between the ceded and unceded lands in Minnesota, and the reservations of lands allotted to certain Indian tribes, with explanatory notes on a separate paper. This map is a portion of Dr. Owen's geological chart of Wisconsin, Iowa and Minnesota reduced at this office and revised by Nicollet's large chart of the Hydrologic basin of the Upper Mississippi, and, on this map, are laid down the guide Meridians No. 1, No. 2, and No. 3, as alluded to in the foregoing – but, it is to be remarked, that the foregoing instructions were prepared from a map which showed the guide Meridian No 1. would strike the Mississippi somewhere in the vicinity of Fort Snelling – the present map, however, is believed to be more accurate and shows that the striking point on the Mississippi will be much to the eastward of the Fort.<sup>17</sup>

Since the instructions were prepared, but before completion, the utility has suggested itself, of another guide meridian, forty-two miles to the east of that marked No. 1. It had previously been designated to omit the same from consideration of economy only, but, for the purpose of ensuring greater accuracy, binding the surveys yet more effectually together, and limiting error, it has been concluded to propose another guide meridian, making four East of the Waraju, and which will be known respectively, as guide Meridians No. 1, 2, 3, & 4.

It is designed that these guide Meridians shall be double chained, one set of chainmen

following the other, such operation is likely to increase the expense, but it is hoped that you will be able so to arrange your contracts, as to bring such expense within the legal maximum, and on this subject you are requested, as soon as possible, to advise this office.

By the same mail which will convey this communication, are forwarded, two packages containing each seven copies of the Manual of instructions prescribed for the government of the Oregon Surveys, and also a large roll containing a number of copies of three diagrams, which accompanied the same and by which yourself and deputies will be governed. The same roll contains the maps herein referred to, on which are laid down the four guide Meridians.<sup>18</sup>

In the same letter the Commissioner of the General Land Office also wrote,

The surveys in Minnesota, West of Mississippi River, (with the exception of those in the reduced Military reserve at Fort Snelling, concerning which you are specially instructed in my letters of the 6th & 13th inst.) will count from the Arkansas Base, and from the Fifth Principal Meridian in continuation of those in Iowa; - the townships, therefore, will all count, North of the Base Line, and the ranges West of the Fifth Principal Meridian.

The boundary parallel of 43°30' will be the great surveying base for Minnesota, and is understood to have been prepared accordingly to be such, by having the corners for townships, sections, and quarter sections planted thereon, in advance.

Those surveys will be affected according to the method prescribed for the public surveys in Oregon, as required by law.

First: The Standard parallels, or correction lines will be due East and West lines, run at every fourth township, twenty four miles apart.

Second: The township, section, and quarter sectional corners are to be planted on those correction lines at the time when surveyed.

Third: The corners for the townships, sections and quarter sections, which will close from below on the correction line, will constitute a double set of corners on such lines, and every where else double corners are inadmissible.<sup>19</sup>

### **Surveying the First Standard Parallels and Guide Meridian in Western Minnesota**<sup>20</sup>

On June 2, 1853 Warner Lewis awarded Elisha S. Norris a contract to run Guide Meridians 1, 2, and 3 and the standard parallels between them. He wrote to Norris,

You are to commence your survey of Guide Meridian No.1 at the corner to Ranges 10 and 11 and from said corner run on the true Meridian due north to the Mississippi River.

Guide Meridian No.2 you will start from corner to Ranges 17 & 18 and survey in like manner to the Mississippi which it will probably reach about Township 115.

Guide Meridian No.3 will be started from corner to Ranges 24 & 25 and be surveyed due North to the Mississippi River.

After you have run and marked Guide Meridian No.1 you are required to survey and establish from the corner to township 104 & 105 in said Meridian a standard parallel of correction line due east to the Mississippi River.

Twenty-four miles north of at corner to towns 108 & 109 you are to run due east another parallel.

After you have completed the survey of Guide Meridian No.2 you will from corner to Township 104 & 105 in said Meridian random East for corner to same Townships in Guide Meridian No. One, and returning give the corrected notes to the same. At corner to townships 108 & 109 the same process will be followed and at corner to Township 112 & 113 you will run another parallel.

After the completion of Guide Meridian No.3 you are to survey in like Manner the parallels which have their starting points at corner to Towns 116 & 117 and 120 & 121.<sup>21</sup>

A few days later, on June 6, Lewis wrote to Commissioner Wilson, with some concern,

In compliance with said instructions I have entered into contract for the Survey of Guide Meridians No.1, 2, and 3 and will in the course of a few days let No.4. Having carefully examined the Oregon instructions which I am required to carry out, I find neither in them nor your own any provision for the convergency of the above named Meridian, consequently as the Towns progress north they are continually growing smaller. As this is a fact that could not have escaped you notice, I am led to infer that at some future date this will be corrected by a new Base to be started probably from the neighborhood of Sauk Rapids.

The instructions as to the method of surveying township exteriors are perfectly plain, but the limits are small ("about the amount of calculated convergency" which is about 70 links near the base) that I have thought best to inquire if this rule is to be rigidly enforced and no greater limits allowed for closing a township.<sup>22</sup>

On June 16 Commissioner Wilson replied, correcting Lewis

I have to acknowledge the receipt of your letter of 6<sup>th</sup> inst. stating that you had received the instructions of 16<sup>th</sup> ulto for conducting the surveys in Minnesota Territory West of the Mississippi river and had contracted for the survey of the guide meridians No.1, 2 and 3, and would shortly contract for the survey of No.4.

The Oregon method (applied to the Minnesota surveys aforesaid) requires that Standard Parallels, or Correction lines be established at every fourth township or twenty-four miles from the main surveying base. On those standard lines, the boundary corners for Townships, Sections, and quarter sections are to be established at the time the lines are run, whereby every such standard or correction line is prepared, in itself, to be a practical surveying base from which the surveys (made from it) are to take a new start at every twenty-four mile, whereby the effect of convergency of Meridian Lines is very much restricted. – the survey is to start from below on a parallel with full measure of six mile, one mile and half-mile distances and close on the parallel above it, according to the convergency of the true meridian as required by law; and therefrom (illegible word) the necessity of double corners on the standards, are set for the closing surveys and another for the starting surveys. However, on reflection, you mite (sic) perceive you are mistaken in supposing that “at some future date,” it is designed to have a “new base to be started probably (in) the neighborhood of the Sauk Rapids,” because the proposed plan provides for a series of bases from which the surveying operations will be ever taking a new start, at convenient intervals. In order, however, to properly carry out the Oregon Method in Minnesota, your guide Meridians will necessarily have to be offset so as to admit of full measure of six mile for townships on the standard parallels. The method of doing this was left to your own discretion, but as the subject has been called up in you letter aforesaid, it is proposed, for your consideration, that guide Meridian No.1 and 2 be offsetted, number1 forty chains, and number 2, twenty chains, to the east, at every twenty-fourth mile where it will be intersected by the respective parallels and that your guide meridian number 4, be offsetted twenty chains to the west at similar intersection points which (illegible word) the latitude of all of the five standards, will allow for, and overcome, a convergency of one hundred chains - the actual convergency between the parallel of 43 degrees 30 minutes and 45 degrees N.L. being one mile and twenty-six hundredths.

The guide meridian No.3 will not be offsetted, but be run as one continuous meridian. The mode of offsetting (as proposed) is illustrated by Diagram B, herewith.<sup>23</sup>

The Commissioner went on to describe how the standard parallels were to be established,

To establish a standard parallel between any two meridians from the appropriate fourth township station, (which we will call A) on one meridian to the corresponding station (we will call B) on the other meridian (illegible word) of it, you will first cause to be run and carefully measured a trial line from A to B, and set thereon, temporarily, distinctive marks at the respective points for township, section, and quarter section corners (illegible word) ascertain the deviation of the trial line, correct and remeasure back on the true, permanently establish the same and plant thereon, from west to east, the true boundary corners.<sup>24</sup>

You are requested to refer to the points A and B shown on the accompanying diagram (marked A) which is an extract from the one you have. To run the parallel from A to b, the point b must be determined by running q due North line, marked blue on the diagram, with precise measurement of twenty four miles, starting from the point 2 on

Figure 1. Diagram B referred to in the letter Wilson to Lewis, dated June 16, 1853.<sup>25</sup>  
 Note the so-called Half-Breed Reservation on the Mississippi River that would not be surveyed until later.

the Iowa boundary; and then, from the point b, run a trial line westward to A, carefully measuring the same and setting, temporarily, the place for the township, section and quarter section corners, respectively, and, afterwards, correcting and carefully remeasuring, back on the true line, and establishing the same, and constructing the true corner boundaries from A through b to the Mississippi river.<sup>26</sup>

That portion of the fourth standard parallel between the third guide meridian and the Mississippi river, c to d, will be also governed by the method above mentioned; but the lines e to f, g to h, i to k, will be run, at once, from the appropriate meridian, due East to the river, and to the half-breed Sioux reserve, without a random.

I would here observe that it mite (sic) be a true economy, both of time & travel, so to regulate the contract for surveying the first Standard Parallel, as to require the Deputy, on reaching point A in the mode stated, to run on trial lines, the entire Standard from A to B, B to C and from C to D, such trial lines to be most carefully measured with temporary corners planted on them, as (illegible word), by one continued series of operations. Westward; and returning from D (illegible word), by another continued series of operations, correct back, Eastward, remeasure the true line, and plant thereon, the true boundary corners, from D to C, from C to B, and from B to A, through b, to

the Mississippi river.

In the illustration given on pages 40 & 41 of the manual for the Oregon Deputies, treating the closing measurements on this parallel, it is said, “the last half mile of which will fall short of forty chains about the amount of the calculated convergency per township” – such, in theory, is the fact; but it is nevertheless expected, in practice, that, according to the nature of the locality of the surveys, a fair allowance for misclosures would have to be made also, as has been usual; but this office dealing to establish any general rule for such allowance. In regard to that matter the Survey General of Oregon, when here, was told in advance, that he must exercise a sound discretion, to be regulated by the necessity of the case, according to the locality of the surveys, and the particular topographical features of the country – and you will have to do the same in regard to the Minnesota surveys. On open level country, a very thickly wooded country and a mountainous region do not admit of one and the same general regulation.

The double-chaining of a guide meridian is to be done under one and the same surveying contract, by two different sets of chainmen, one set immediately following in the wake of the other, so as to be able to compare notes at every corner boundary, whereby error may be immediately detected and the remeasurements necessary to correct the same be made without delay.

In directing the survey of the standard and parallels you will be governed by the diagram herewith. On further reflection, since the receipt of your communication, it is deemed best to cause all the standard parallels to be run out in full, after the meridian lines are run, or to the extent that they will be completed when the contracts are given out, so as to be prepared to meet the party of the settlers at all points, which (illegible word) the settlements may tend. The survey of the standard lines and meridians will enable your Deputies to afford you very accurate information as (illegible word) the different settlements, to enable you hereafter to order the running of township and subdivisional surveys.

You are left to the Exercise of your best judgment as to the mode of regulating the size of your contracts.<sup>27</sup>

On June 24, 1853 Lewis relayed these instructions to Norris,

I have just received further instructions from the Commissioner of the General Land Office which requires an alteration of you instructions to the surveys of Guide Meridians and Standard Parallels and you will receive diagrams marked A & B which with the following will fully illustrate the change.<sup>28</sup>

He says “In order to carry out the Oregon method in Minnesota” “your guide meridian’s (will) necessarily have to be offsetted so” “as to admit the full measure of six miles for townships on the” Standard parallels” – vis (?)

Guide Meridian No.1 will have to be offset 40 chains (on first correction) (to the East) and No.2 – 20 chains to the East at every 24<sup>th</sup> mile where it will be intersected by the respective standard parallels, whilst Guide Meridian No. 3 will be run all the way without offsets (see diagram B)

It is supposable that Guide Meridian No.1 and the parallels E. of it are already surveyed and that you have started at No.2. If you can correct your work without serious trouble and expense, it would be a very great accommodation to this office, give the commsr much satisfaction, and will not fail to be remembered to your advantage hereafter; but if it is impossible to make the corrections. I cannot require you positively to carry out these instructions as no compensation will be allowed for the same.<sup>29</sup>

On July 28 Norris wrote to Lewis,

Accompanying this, you will receive field notes of Guide Meridian No. 1 and also No.2 through Townships 101, 102, 103, 104 North and the first correction from the Second Guide Meridian and the second correction from the first Guide Meridian East to the Mississippi River and also the township line Between Ranges 4 & 5 up to the first correction. I regret that my work has been somewhat delayed by a defect in the adjustment of my instrument.

You will notice that I have extended the 1<sup>st</sup> Meridian and the 2<sup>nd</sup> Correction to the Mississippi River. The boundary line of the Sioux half-breed reserve has probably never been run and if so, there is none, now in existence (sic) and I felt required in case such boundary line could not be found to continue mine to the Mississippi, I (word illegible) the Commissioner will see the propriety of compensating me the same as for the balance of the lines.

None of the lines above have been run to the main channel of the River. The high water rendered it impossible to extend the lines onto and across t the Islands. I would respectfully suggest that the subdividing deputies might be instructed to do this should it be desired to put it under contract.

My return to this part of the work to do it. The distances in all the lines is but trifling. I am progressing but slowly.

The whole of the tract traverse by my lines will be wanted for settlement and is recommended for survey.<sup>30</sup>

## Conclusion

The lines run to Elisha Norris were the first of their type in Minnesota. Established under the Manual issued to govern the surveys in Oregon, they established the procedures that would be followed in future surveys west of the Mississippi throughout Minnesota. They raise intriguing questions.

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<sup>1</sup> “The First Township Exteriors in Minnesota” Minnesota Surveyor vol. 15 (Winter 2007-2008) pp. 17-20, 22-23, 25-27; “A Geography of Township Exteriors in Minnesota Territory 1847-1852.” Minnesota Surveyor vol. 16 (Spring 2008) pp. 8-10, 27-34. For the text of the 1846 instructions see White C. Albert A History of the Rectangular Survey System (Washington DC. Government Printing Office, 1983) pp.340-355.

<sup>2</sup> The surveys started in Wisconsin in 1831 under the supervision of the Surveyor General of Michigan, Indiana, and Ohio. There were two Baselines for the 4<sup>th</sup> Principal Meridian, hence two initial points, see White, C. Albert Initial Points of the Rectangular Survey System (Colorado Professional Surveyors Educational Foundation, 1996) pp. 125-134, 155-167

<sup>3</sup> The surveys started in Iowa in 1831 under the supervision of the Surveyor General of Michigan, Indiana, and Ohio. For a description of the initial point, see White supra note 2 pp. 115-124

<sup>4</sup> In much of the correspondence at the time, Minnesota west of the Mississippi River was known as “West Minnesota.” East of the Mississippi was known as “East Minnesota.” No surveys were carried out in Western Minnesota before 1853 because the land had not been ceded by the American Indian bands. In 1851, the Dakota bands signed two treaties with the United States. On July 23, at Traverse des Sioux, the Sisseton and Wahpeton bands ceded their use and occupancy rights to lands west of the Mississippi. On August 5, at Mendota, the Med-ay-wa-kan-toan and Wah-pay-koo-tay bands followed suit. Neither treaty was made official until February 24, 1853 when President Franklin Pierce proclaimed them. 10 Stat. 949; 954. The first contracts for surveys west of the Mississippi were made later that year.

<sup>5</sup> On March 3, 1851, the General Land Office had issued General Instructions to the Surveyors General in Oregon and California. White supra note 2 p.434. On October 23, 1851, the Surveyor General Sargent, was directed to run range lines north to intersect with correction lines and establish closing corners following this so-called Oregon Manual. Id. p.116 On July 10, the following year, Sargent was directed to use the Oregon Manual to govern future surveys in Minnesota. Id.

<sup>6</sup> Id. For a description of other surveying characteristics at the time, see Rod Squires “A geography of the public land surveys in Minnesota Territory, 1853” Minnesota Surveyor vol. 12, 3 (Fall 2005) pp. 23-29

<sup>7</sup> Id. The Manual had the greatest impact on future surveys in Western Minnesota. I presume that all deputies subsequently awarded surveying contracts followed the procedures outlined in the Manual although I note that the Surveyor General was allowed some discretion to enforce the procedure, see below, where the letter dated July 10, 1852 is transcribed

<sup>8</sup> See White supra note 2 p.436 ff. Previously errors caused by convergency had been corrected through correction lines that were spaced at varying distances from each other.

<sup>9</sup> Id. p.441

<sup>10</sup> These corners were to be distinguished from the corners on other lines. Id.

<sup>11</sup> Letters Sent by the General Land Office to Surveyors General, 1796-1901 National Archives Microfilm M27 vol. 15 pp.2-5 This letter was previously published in my article “Comments on the instructions to deputy surveyors in Minnesota, 1847-1860.” Minnesota Surveyor vol.2,1 (1995) 12-16. In that article the letters was given a date of either June 28 or July 19, 1852. I do not know to what diagram Wilson is referring.

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<sup>12</sup> Id. Neither “standard parallels” and “check meridians” were new surveying terms. Both had been introduced as early as 1819 by Thomas Freeman, the Surveyor General of Florida, although neither became widely used, see White supra note 2 p.74. Although the Oregon Manual introduces “standard parallels, neither it, nor the Manual of 1855, contains any mention of “check” or “guide meridians.” The first Manual to mention “guide meridians” was the one issued in 1889, see Id. p. 556. Note that “check meridians” were introduced in a letter from the Commissioner of the General Land Office to the Surveyor General of Wisconsin and Iowa, a category of instructions that is often overlooked, see Rod Squires “Some preliminary thoughts on instructions for surveying the public lands in Minnesota” Minnesota Surveyor Vol. 15, 2 (Summer 2007) pp.16-18, 20-21, 23.

<sup>13</sup> Letters supra note 11. Again, I am not sure what diagram Wilson is referring to.

<sup>14</sup> Id. pp.291-297

<sup>15</sup> Id.

<sup>16</sup> Id. Curiously, this diagram, Diagram A was not reproduced by White to accompany the 1851 Manual. It was, however reproduced to accompany the 1855 Manual, see White supra note 2 pp. 494-495.

<sup>17</sup> Letters supra note 11. I have not seen this diagram.

<sup>18</sup> Id. pp.291-297. Undoubtedly, these instructions should be defined as special instructions although they were directed at the Surveyor General rather than a particular deputy, see Squires supra note 12.

<sup>19</sup> Id. Interestingly, this portion of the letter contains no reference to check meridians.

<sup>20</sup> The surveys reported were the subject of a paper published in this magazine in 1995, see Thomas Simpson, “The early government land surveys in Minnesota west of the Mississippi River” Minnesota Surveyor vol.2, 4 (1995) pp.16-19. This was reprinted from an article of the same name published in the Minnesota Historical Collections vol. X (1906) pp.57-67. Some of the assertions made by Simpson are not borne out by the information in the correspondence described here.

<sup>21</sup> I have not seen this letter but merely a transcription. I do not know its origin. It comprises part of the collection titled, Letters Sent. Secretary of State Land Records, Record Group 81 in the Iowa States Archives, which consists of several letterbooks containing copies of the letters sent by the Surveyor General to a variety of individuals. Volume E of the collection contains letters written between October 1851 and May 9 1853 while Volume F contains letters written between December 5, 1853 and April 25, 1857. A transcribed copy of this letter, written June 2, 1853 is apparently missing.

Note that Norris was to run the 1<sup>st</sup> and 2<sup>nd</sup> Standard Parallel eastwards from the 1st Guide to the Mississippi. However, he was to run the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> Standard Parallel between the 1<sup>st</sup> and 2<sup>nd</sup> Guide from west to east. From the letter it is not obvious that Norris was to run the 1<sup>st</sup>, 2<sup>nd</sup>, or 3<sup>rd</sup> standard parallels between the 2<sup>nd</sup> and 3<sup>rd</sup> guides. He did, in fact, run the 2<sup>nd</sup> and 3<sup>rd</sup> but not the 1<sup>st</sup>. In addition he ran a line east of the 1<sup>st</sup> guide, between R 4-5. Why, I do not know.

<sup>22</sup> See supra note 21. A transcribed copy of this letter, written June 6, 1853 is apparently missing.

<sup>23</sup> Letters Received from the Commissioner of the General Land Office 1852-1856. Secretary of State Land Records, Record Group 81 Box 60. Iowa State Archives. See also Letters Sent by the General Land

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Office to Surveyors General, 1796-1901 National Archives Microfilm M27 vol.15 pp.344-348. I believe Diagram B is shown in Figure 1.

<sup>24</sup> Id. Note, the Commissioner stated that the “true line” of a Standard Parallel was to be run west to east, clearly at odds with the instructions Lewis had given to Norris, supra note 21. How Norris carried out the surveys will be the subject of the next article.

<sup>25</sup> I have a copy of this diagram but I do not know who gave it me or its origin. It just looks old and official.

<sup>26</sup> Clearly, I need to find some of these diagrams.

<sup>27</sup> Letters Received supra note 23

<sup>28</sup> I have not seen Diagram A and B. A transcribed copy of this letter written June 24, 1853 is apparently missing, see supra note 21.

<sup>29</sup> Id.

<sup>30</sup> Letters Received supra note 23.

## STANDARD PARALLELS AND GUIDE MERIDIANS IN WESTERN MINNESOTA: THE SURVEYS OF ELISHA S. NORRIS. Rod Squires, University of Minnesota

### Introduction

In the last article I described some of the correspondence between John Wilson, the Commissioner of the General Land Office, and Warner Lewis, the Surveyor General of Wisconsin and Iowa, and between Lewis and Elisha Norris, the deputy awarded a contract to establish the first standard parallels and guide meridians in western Minnesota.<sup>1</sup> Here I describe how Norris carried out the work specified in his contract, focusing on the correspondence between Wilson, Lewis, and Norris and also the correspondence between Lewis and William Neely, appointed by Lewis to examine the lines established by Norris, and the two deputies appointed to resurvey some of those lines, John Ball and John Ryan. I also add information taken from the relevant field notebooks. (Figure 1)<sup>2</sup>

Volume	Line Segment	Contract Date	Survey Date
8	1-3	June 2, 1853	June 2-28, 1853
13	4-7	June 2, 1853	June 30-Sept. 4, 1853
12	8-10	June 2, 1853	August-Sept. 30, 1853
27	11-12	June 2, 1853	Sept. 17-22, 1853
22	13-14	June 2, 1853	Sept. 24 – Oct 3, 1853
33	15-16	June 2, 1853	Oct 6. -18, 1853
52	17-22	June 2, 1853	Oct. 14-29 1853
34	23	Oct. 23, 1853	Oct. 1853
47	24	Nov. 1, 1853	Nov. 21-30 1853
49	25	Nov. 1, 1853	July 13 – 29, 1854
78	25	No information	No date

Figure 1. Field notebooks referenced here. Line segments refer to those shown in Figure 2

### The Contract Awarded Norris

On June 2, 1853, the Surveyor General of Wisconsin and Iowa, Warner Lewis, awarded Elisha S. Norris a contract to run Guide Meridians 1, 2, and 3 and the standard parallels between them. In the special instructions, Lewis wrote,

The contract into which you have this day entered embraces in part the survey of certain lines designated by the Commissioner of the General Land Office as Guide Meridians No. 1, 2 & 3 – The Parallel of 43° 30' North Latitude which forms the Boundary between the State of Iowa & Territory of Minnesota will form the base for all surveying operations in said Territory on the West side of the Mississippi river, and from the great care with which it was run & marked will compare favorably with any other base for surveys in the United States.

In view of the fact that it has been decided that the surveys North of said Base shall be conducted in accordance with the method prescribed for the public surveys in Oregon a copy

of the instructions to the Surveyor General of that district giving full directions as to the manner in which the lines shall be run with all the particulars as to the monuments is herewith furnished you and the portions thereof which refer more particularly to your work & which you are implicitly to follow you will find enclosed in black lines.<sup>3</sup>

The surveys in Minnesota will all count from the Arkansas Base that is the Townships will count in continuation of those in Iowa while the Ranges will number from the Fifth Principal Meridian.

You are to commence your survey of Guide Meridian No. 1 at the corner to Range 10 & 11 and from said corner run on a true Meridian due North (establishing at 40 and 80 chs respectively the proper miles and half mile corners as you progress) to the Mississippi river. By reference to the accompanying map however which has been carefully compiled in this office it will be seen that said Meridian will strike the Southern boundary of the Reservation set aside for the use of the Half Breeds of the Sioux Nation under Treaty of July 15<sup>th</sup> 1830 before it reaches the river. Should this prove to be correct you are to carry said Meridian no farther than the limits of said reservation; but at the point of intersection, plant a monument, take the proper bearings within your own work, and give the intersection with the nearest corner planted on the boundary of said Half Breed tract.

Guide Meridian No. 2 you will start at corner to Ranges 17 & 18, and surveyed in like manner to the Mississippi River which it will probably reach about Township 115.

Guide Meridian No. 3 will be started from corner to Ranges 24 & 25 and be surveyed due North to the Mississippi River. It is required by the Commissioner that these lines be double chained, one set of chainman following the other, and that monuments planted therein shall be made in the most enduring manner and in strict conformity to the accompanying printed instructions.

After you have run and marked Guide Meridian No. 1 you are required to survey and establish from the corner to Township 104 & 105 (on) said Meridian a standard parallel or correction line due East to the Mississippi river & when you bear in mind the fact that the Townships below will have to close to this parallel in the manner and with the precision indicated by the accompanying diagram A you will at once see the importance of having said line accurately run with respect to course and measurement.<sup>4</sup>

Twenty four miles North or at corner to Towns 108 & 109 (should your Meridian extend so far North, if not, from a point opposite on the boundary of the reservation) you are to run due East another parallel with the same care and accuracy as the first.

The field notes of the above lines with Guide Meridian No. One you are to return to this office property attested with the diagram so soon as the same shall have been completed.

After you have completed the survey of Guide Meridian No. 2 you will from corner to Townships 104 & 105 (on) said Meridian random East from corner to same Townships in Guide Meridian No. One, and returning give the corrected notes to the same. At corner to townships 108 & 109 the same process will be followed; and at corner to Townships 112 & 113 you will run another parallel to the Half Breed Reservation closing regularly to the same and establishing the proper monuments.

Of Guide Meridian No. 2 & the parallels mentioned above you will make a second return to

this office as early as practicable.

After the completion of Guide Meridian No. 3 you are to survey in like Manner the parallels which have their starting points at corner to Towns 116 & 117 and 120 & 121. The printed instructions in regard to monuments and all other particulars you will find full and ample and as they are entirely new to the deputies of this office, it is recommended that you use great diligence in becoming master of their contents. I would again call to your attention the fact that too much care cannot be taken in the execution of this work – The price that you are paid is sufficient to ensure the greatest accuracy attainable and should hereafter errors be detected you will recollect that by the terms of your contract you are responsible for the same. It is my earnest desire that the work should be well done & so far as you are concerned I have no fear of the result.

It is expected that the whole will be completed with as much dispatch as accuracy will warrant.

Should the correction which starts from Guide No. 3 corner to Township 120 & 121 intersect the isolated survey made in connection with the reservation at Fort Snelling (which matter has been verbally explained to you) of course you will close to the boundary of said survey without continuing your line farther and observing in all cases to take bearings only in you own work & give the intersection with the nearest corner planted on such survey or Reservation.

It is also required that wherever your lines intersect the Mississippi river you will show the connection with some corner of the surveys on the opposite side of the river in order that the relative positions of the surveys on the E & W sides of the Mississippi may be truly shown.<sup>5</sup>

These instructions bear repeating.

1. The Iowa-Minnesota boundary would be a base for the surveys in Minnesota West, thus the line would perform the function of a standard parallel.
2. The lines would be run according to the instructions printed in the Oregon Manual of 1851.
3. The townships would count from the Arkansas Baseline and the ranges from the Fifth Principal Meridian.
4. All lines intersecting the Mississippi River were to be tied to the surveys already completed on the east side.
5. The first Guide Meridian would be run from the Iowa-Minnesota boundary north between R10/11W. Along this line section and half-section corners were to be established.
  - It was to be double chained. It would close, if necessary, on the Half-breed reservation boundary line.
  - A standard parallel would be run from it and the corner to T104/105N due east to the Mississippi.
  - The lines of townships lying to the south of the parallel would close against it.
  - A second standard parallel would be run from Guide Meridian No. 1 and the corner T108/109N due east to the Mississippi.
  - The field notes for these surveys were to be returned as soon as they were completed.
6. The second Guide Meridian would be run from the Iowa-Minnesota boundary north between R17/18W. Along this line section and half-section corners were to be established.

- It was to be doubled chained.
  - Two standard parallels would run between Guide Meridian No. 1 to Guide Meridian No. 2, the first between T104/105N and the second between T108/109N. A random line would be run east, and a corrected line west, for each.
  - A third Standard Parallel would run between T112/113N from Guide Meridian No. 2 to the Half-breed reservation line. Exactly how was not specified.
  - The fieldnotes for these surveys were to be returned as soon as they were completed.
7. The third Guide Meridian would be run from the Iowa-Minnesota boundary north between R24/25W. Along this line section and half-section corners were to be established.
- A fourth Standard Parallel would run from the Meridian at T116/117N to the Mississippi. Exactly how was not specified; Norris was to survey it “in like Manner,” presumably to the other parallels.
  - A fifth Standard Parallel would run from the Meridian at T129/121N to the Fort Snelling military reservation boundary. Again, exactly how was not specified, Norris was to survey “in like Manner.”

Notice that Norris was not instructed to (a) offset Guide Meridians 1 and 2, nor (b) establish the first, second, or third Standard Parallels between Guide Meridians 2 and 3.

On June 6, Lewis wrote to the Commissioner of the General Land Office, Joseph Wilson, explaining the instructions he had given Norris.<sup>6</sup> On June 16 Wilson replied that Lewis had instructed Norris incorrectly and described how the lines were to be run.<sup>7</sup> Lewis relayed the amended instructions to Norris in a letter dated June 24, 1853, writing

I have just received further instructions for the Commsr of General Land Office which requires an alteration of your instructions in relation to the survey of Guide Meridians & Standard Parallels and you will receive diagrams marked A & B which with the following will fully illustrate the change.<sup>8</sup>

He says “In order to carry out the Oregon method in Minnesota” “your guide meridian’s (will) necessarily have to be offsetted so” “as to admit the full measure of six miles for townships on the Standard parallels” – viz

Guide Meridian No. 1 will have to be offset 40 chains (on first correction) (to the East) and No.2 – 20 chains to the East at every 24<sup>th</sup> mile where it will be intersected by the respective standard parallels, whilst Guide Meridian No.3 will be run all the way without offsets (see diagram B).

It is supposable that Guide Meridian No. 1 and the parallels E. of it are already surveyed and that you have started at No. 2. If you can correct your work without serious trouble and expense, it would be a very great accommodation to this office, give the commsr much satisfaction, and will not fail to be remembered to your advantage hereafter; but if it is impossible to make the corrections. I cannot require you positively to carry out these instructions as no compensation will be allowed for the same. To make said corrections you will have to move all your comers on Guide Meridian No. One north of the first parallel & to the second 40 chains East and all your section corners on the 1<sup>st</sup> standard parallel East of the Guide Meridian No.1 will have to be changed to ¼ corners as the Meridian offsetted (sic) as directed would start at the 1<sup>st</sup> post East on your 1<sup>st</sup> parallel and the qr corner to section corners

(whilst on the second correction parallel to the corners would have to be demolished and others established) To establish the line from A to b, the point b must be determined by running a due North line (marked in blue on diagram A) with precise measurement of twenty four miles starting from point a in the Iowa boundary; and then, from the point b run a trial line Westward to A, carefully measuring the same & setting temporarily the mile and ½ mile corners and afterwards correcting and carefully remeasuring back on the line & establishing the same & constructing the true corner boundaries from A through b to the Mississippi river.

The portion of the fourth standard parallel between the 3<sup>rd</sup> Guide Meridian & the Mississippi river c to d will also be governed by the method above mentioned, but the lines e to f, g to h, i to k will be run at once from the appropriate Meridian due East to the river, and to the half-breed reservation without a random.

The diagrams sent here are the originals & must be carefully preserved & returned to this office as time would not admit of their being copied.

Whatever notes you may have ready to return in conformity to your previous instructions can be sent by the bearer, as well as your report on the character of the country, extent & settlement with any other information which you may have been able to obtain which will be of service to this office in its future operation.<sup>9</sup>

So, in these amended instructions Norris was told to offset the first Guide Meridian 40 chains to the east at each Standard Parallel and the second Guide Meridian 20 chains to the east at each Standard Parallel. Lewis expected that Norris would have already completed the first Guide and asked that he correct it as directed. Note that Lewis stated “I cannot require you positively to carry out these instructions as no compensation will be allowed for the same.”<sup>10</sup> Norris was given explicit instructions on how to establish the first Standard Parallel. He was to run a line 24 miles northwards from the Minnesota-Iowa boundary along the line a, b, presumably the line R4/5W to T104/105N, which is where Norris ran his line.<sup>11</sup> He was then to run a random line westward to A, presumably the first Guide, correcting the line eastwards through b to the Mississippi River.<sup>12</sup>

On the same day, June 24, Lewis wrote to Commissioner Wilson.

I have the honor to acknowledge the receipt of your letter of instructions of the 16<sup>th</sup> inst which came to hand this morning. Immediately on the receipt thereof I dispatched a special messenger to Mr. Norris the Deputy engaged in the survey of the Guide Meridians and Standard parallels in Minnesota West of the river but as Mr. Norris has been in the field for some time, I fear that Meridian No one and the parallels East of it are already surveyed as well as a portion of Meridian No 2 which would render it impracticable without an entire re-survey North of the first Standard parallel to follow the suggestion contained in your said letter. I cannot compel Mr. N to do this but I have urged him very strongly to comply with my request if at all possible and I believe he will do every thing in his power to comply with your wishes.<sup>13</sup>

He added – and I can just imagine his frustration,

I regret very much that these instructions had not come to hand sooner. From the map & accompanying instructions of 16<sup>th</sup> May, I could see nothing that would indicate that the Guide Meridians were to be offsetted, and as they were entirely different from any instructions I have

ever seen before, I did not feel authorized to deviate in the slightest from what I conceived to be the strict letter and spirit of them.<sup>14</sup>

By June 24 Norris, along with his crew, four chainmen - Thomas Simpson, J. O. H. Aveline, A. F. Johnson, and W. Kendall, axeman Sidney Wells, and flagman A. Foster, had been in the field over three weeks. His notes show he ran the first Guide Meridian, which would become the range line between Ranges 10 and 11 from the Minnesota-Iowa boundary to the Mississippi River from June 2 to 28, 1853.<sup>15</sup> However, it seems obvious that he had received the amended instructions because at the corner to T104N he made an offset east of 40 chains along what would become Standard Parallel No.1.<sup>16</sup> At T109N he made another offset of 20 chains along what would become Standard Parallel No. 2.<sup>17</sup> He intersected the right bank of the Mississippi River 20.65 links north of the corner between sections 19, 30, 24, and 25. There he set a meander post and gave it a bearing to a flag set on the other side of the river at a meander post marking the intersection of the line between sections 2 and 3 of T22N R14W and the left bank of the River.<sup>18</sup> Norris signed the requisite affidavit on June 29, 1853, writing, "The country over which this line passes is elevated & valuable for agricultural purposes. It is well supplied with water & timberland and will soon be occupied by settlers."<sup>19</sup>

From June 30 to September 4, 1853 Norris and the same crew members established the first and second Standard Parallels from Guide Meridian No.1 to the Mississippi.<sup>20</sup> He ran a line northwards from the territorial line between T101N R4/5W to T104N, thus establishing an "end point" for the first standard as directed by Lewis in the amended instructions of June 24. This line took him five days to complete. Then he diverged both from his original instructions, that he run a line due east, and his amended instructions, that he run a random line west and a corrected line east. On September 2 he started at the corner to T104N R10/11W and ran a random line eastwards, setting temporary corners as he went, and at 35 miles and 72 chains along the line he intersected the line he had previously ran 118 links south of the corner to T104N R4/5.<sup>21</sup> He wrote, "The correction will therefore be 3½ links north to the mile."<sup>22</sup> He corrected his line westwards, finishing it on September 8.<sup>23</sup> He then started at the standard corner to T104N R4/5W and ran eastwards to the right bank of the Mississippi at which point he set a meander post, continuing the line to, and across, an island setting meander posts on both sides.<sup>24</sup> At the end of his work, which must have occurred September 10 or so, he wrote, "The country over which this line passes is very broken, soil mostly 3d rate. Timber scattering & none very good. Generally well watered by brooks and streams that flow South into Root River."<sup>25</sup> He then turned his attention to Standard Parallel No.2. Beginning at the corner of T109N R10/11W he ran eastwards "on a true line" establishing the appropriate corners. At the intersection of his line with the Mississippi he established a meander post. In his affidavit, dated September 4, he wrote of the country "The tract of country traversed by this line is broken & only valuable for the timber."<sup>26</sup>

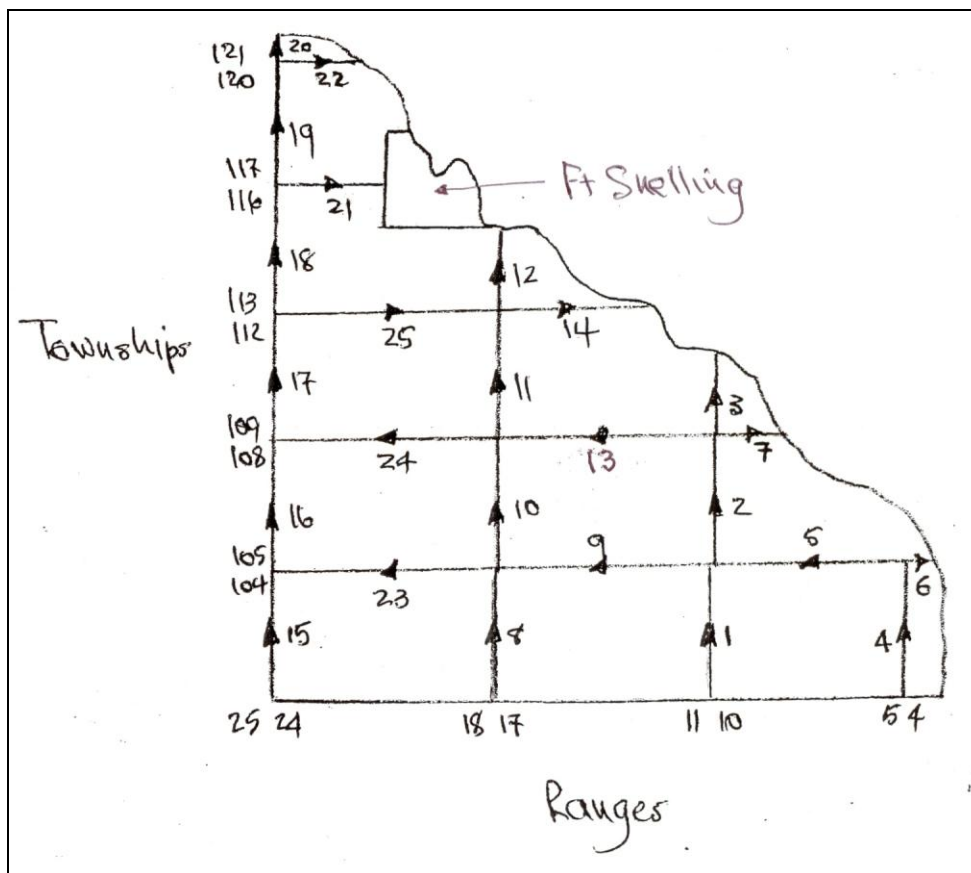


Figure 2. Line segments described in this article and the directions in which they appear to have been run

On July 28 Norris sent his first returns to Lewis, writing .

Accompanying this, you will receive field notes of Guide Meridian No.1 and also No.2 through Townships 101, 102, 103, 104 North and the first correction from the Second Guide Meridian and the second correction from the first Guide Meridian East to the Mississippi River and also the township line Between Ranges 4 & 5 up to the first correction. I regret that my work has been somewhat delayed by a defect in the adjustment of my instrument.

You will notice that I have extended the 1<sup>st</sup> Meridian and the 2<sup>nd</sup> Correction to the Mississippi River. The boundary line of the Sioux half-breed reserve has probably never been run and if so, there is none, now in existence (sic) and I felt required in case such boundary line could not be found to continue mine to the Mississippi, I (word illegible) the Commissioner will see the propriety of compensating me the same as for the balance of the lines.

None of the lines above have been run to the main channel of the River. The high water rendered it impossible to extend the lines onto and across the Islands. I would respectfully suggest that the subdividing deputies might be instructed to do this should it be desired to put it under contract.

(Missing words) my return to this part of the work to do it. The distances in all the lines is but

trifling.

I am progressing but slowly.

The whole of the tract traverse by my lines will be wanted for settlement and is recommended for survey.<sup>27</sup>

On August 17, 1853 William J Neely, appointed to examine the lines established by Norris, reported,

I have made examinations of Guide Mer. No. 1 as per Instruction under date of July (missing date) and (word illegible) have to report that the first 12 miles – (word illegible) of Ranges 10 & 11 of Towns 101 & 102 is not a true meridian, that corners to Towns 101 & 102 is 176 lks too far to the west. But that the (meridian) through Towns 103 & 104 would do if the work North upon Standard parallel No. 1 (word illegible) was correct.

I also would report to you that I have made examination of different portions of Standard Parallel No. 1 and find the work erroneous. And also the first Six miles of the Guide Mer. No 1 of Town 105. And I refer you to accompanying diagram for the figures for such examinations.

In view of the error as Shown by (such) diagram I would suggest that a re-survey should be made of such lines particularly as would be likely to Extend any Errors whether resulting from course of measurement.<sup>28</sup>

The following day Lewis sent a scathing letter to Norris about the errors in his work,

Your letter of the 29<sup>th</sup> and the accompanying field notes have been received after being looked for long and anxiously. From reports heretofore received, I learned that much difficulty was experienced in closing to your work, but have never been able to test that matter for want of your notes. It is with much regret that I have to inform you of the full confirmation of these reports and of so bad a character are the errors that a resurvey, in some parts at least, is absolutely necessary. I little expected that such carelessness as is apparent in your work would occur particularly after the many cautions you received. The first guide meridian is not a true meridian at all and in Town 105 there are found two mistallies more on it. The standard parallel East of it is not a straight line, neither is the Range lines in Jones' work either a meridian or correctly measured.<sup>29</sup> On the first standard parallel West of said No.1, the measurement shows the work to be forced outrageously and there is every reason to believe that you have never seen this line, for no Deputy Surveyor would have attempted to average in the way that you have done on this line. You have also thrown a fraction on the last half mile of said parallel which you are perfectly aware is not allowable, but I refer you to Mr. Neely the examining deputy who will explain to you more fully the errors that have been committed, and I would candidly advise you to procure if possible a new set of assistants as I think it will appear pretty plain that those you have are not to be trusted. It was perfectly understood that the meridians were to be double-chained and how two sets of chainmen could pass over the mistallies and bad that has occurred without detecting the errors is more than I can imagine and I think evidently shows to say the least of it willful intention on their part to deceive you. Although this office has been put to great inconvenience and the public interest abused in consequence of the delay and errors above alluded to, still I have entire confidence in your integrity and skill as a surveyor and sincerely hope that your work will be returned at an early

day as to meet the expectations of this office.<sup>30</sup>

On August 22, Lewis sent the following to deputy John Ball, who was already establishing township exteriors under a contract awarded July 9, writing,

You are hereby authorized to correct the work of Mr. Norris according to the accompanying diagram which you will return by Mr. Neely to this office. You will also find Mr. Neely before you start to make the corrections; his instructions correspond with yours. You or Mr. Neely will endeavour (sic) to see Norris & if in case he is willing to make the corrections you will give up the job to him. Please tell Mr. Neely to see that the remainder of Norris' work is correct and if it is not Mr. Neely must see that he does it & that all his work is strictly standard in measurement.<sup>31</sup>

Meanwhile, Norris continued to work under his June 2 contract, establishing Guide Meridian No.2 that ran between R17/18.<sup>32</sup> At one corner he noted, "set qr sec post & built mounds with trench per instructions drove charred stake in center & planted Osage orange seed in S.E. corner."<sup>33</sup> He arrived at the intersection T103/104N on August 30, ending his line at intersection T104/105N.<sup>34</sup> Next, he ran the 1st Standard Parallel.<sup>35</sup> On August 31 he noted that he had set a post for corner T104N R17/18W similar to the one he had set above but planting an apple seed in the northwest corner of the trench.<sup>36</sup> He ran east on a true line 20 chains where he set a post for the corner T105N R17/18W. He then continued eastwards on a random line setting temporary posts and intersected Guide Meridian No.1 at 42 miles 23 chains, 1.57 links north of the corner T105N R10/11W.<sup>37</sup> He returned west correcting his line and set permanent posts. He then continued to run Guide Meridian No.2 northwards ending at T108N R17/18W on September 10.<sup>38</sup> His crew signed the required affidavits on September 11. He signed an affidavit notarized by Surveyor General Lewis on September 27.

On September 22, 1853 examiner Neely wrote again to Lewis,

In addition to the lines reported in my last report as having been erroneously surveyed, I would beg leave to report that Guide meridian No. 2 from State Boundary up to Standard Parallel No. 2 was found erroneous both in measurement and course, and that the same has been corrected together with those formerly reported viz. Guide meridian No.1 & Standard Parallel No.1 from Guide meridian No. 2 East to the Mississippi River have all been corrected by re-running the same under special instructions to John Ball Esq. U.S. Dep. Sur. the field notes of which have been furnished you.

Where the work had been re-run this far Mr. E.S. Norris Esq. Dep. for running & c. Meridians & Parallels came & commenced the Survey of Guide meridian No.1 North of Standard Parallel No.1 But with such errors in course and distances that it was impossible for Messrs Ball & Jones to close to (said) Meridian. I immediately to avoid further delay had the same run by John Ball Esq. & herewith furnish the field notes of same line.

In consequence of these errors in Meridians No.1 & No.2 up to Standard Parallel No.2 (illegible word) will have to be re-run to their intersections with the Mississippi River which will be soon done by Mr. Norris.

I have made an examination of different portions of Messrs Ball's and Jones Township lines from the Guide Mer. No.2 East of the Mississippi River & South of Standard Parallel No.1 &

find them correct. Lines well run & marked corner posts & trees marked mounds built trenches & Pits dug as per instructions.

I have not visited any of the subdividing Deputies in Minnesota to make examinations but will as work progresses.<sup>39</sup>

Norris, and his crew, now comprising Thomas Simpson, Sidney Wells, Levi Decker, and John Foster as chainmen, Richard Palmer axeman, and Alonzo Foster as flagman, continued to survey the second guide meridian.<sup>40</sup> He began at the corner of T108N R17/18W and ran an offset 20 chains east. Norris wrote "set post in mound with pitts (sic) and trench for corner to T109N of R17 & 18W of 5<sup>th</sup> P.M. Deposited chare stake & planted Plumb stone at each angle."<sup>41</sup> He ran his line north to standard parallel No.3, which he apparently reached on September 17. He made another offset and continued north, intersecting the right bank of the Mississippi 72.45 chains north of the corner 12, 13, 7, 18 to T115N R17/18W.<sup>42</sup> He wrote, "Not being able to find a corner on the left bank of the Mississippi River to which to close this line at its N. extremity I continued to search down the stream till I found a Meander post between section 7 & 8 of T26N of R20W of 4<sup>th</sup> P.M. I then run a line due east from the corner of section 19, 24, 25, & 30 of T115N 280 chains from which said meander post bears N distant 16.60 links. Distance obtained by Trigonometry."<sup>43</sup> On September 22 he wrote in his general comments, "The tract of country traversed by this line & adjacent thereto possesses every advantage for agricultural purposes. It is well watered by the Cannon and Vermillion River & their tributaries and is well supplied with timber."<sup>44</sup>

On September 23<sup>rd</sup> Deputy Ball wrote to Lewis,

(A)fter sending to your office by Mr. Larmier the field notes of my Township lines & the field notes of Guide Meridian No.2 & the 1<sup>st</sup> Standard Parallel I commenced to Township but could not close on Mr. Norris last corrected post (?) Guide Meridian No.1 of Township 105, 106, 107 & 108. Mr. Neely examined it & found it incorrect & requested me to run it up & I did so & found it badly measured & part of it badly sighted in consequence of Mr. Norris running it up in cloudy weather. I will therefore send the field notes of the same survey to your office by Mr. Neely together with the other corrections of the Meridian in Township 101, 102, 103 & 104 & 1<sup>st</sup> Standard parallel of Ranges 4, 5, 6, 7, 8, 9 & 10 & shall now proceed with my Township lines as speedy as possible hoping that Mr. Norris will have the patience to run the Standard Parallel No.2 correct.<sup>45</sup>

Norris continued his work with his crew, now comprising Sidney Wells and Levi Decker as chainmen, Edward Palmer as axeman, and Alonzo Foster as flagman, running the second standard parallels between guide meridian 1 and 2 from September 24 to October 3. He ran a random line eastwards and corrected west on the south side of T109N from R10/11 to R17/18.<sup>46</sup> He then ran standard parallel no.3 from the corner to T113N R17/18W on guide meridian no.2 eastwards on a true line to the Mississippi.<sup>47</sup> At 37.40 chains on the south side of section 34 T113NR13W he intersected the right bank of lake Pepin where he set a meander post. He wrote of the country, "The tract traversed by the foregoing lines is watered by the Cannon, Vermillion, & Embarrass Rivers & their tributaries. All these streams provide abundant water power & mill sites. Settlements are making in various sections & there are several towns of importance on the Mississippi River. It is desirable that it should be surveyed as early as practicable."<sup>48</sup> The affidavit was notarized by Edward Parker J.P. at Hastings Dakota County on November 28,

1853.

On September 26, 1853, Neely reported that Norris had corrected his work.<sup>49</sup>

Norris surveyed the southerly 48 miles of Guide Meridian No.3 between October 6-13, beginning at the corner to T101N R22/23W on the Territorial line.<sup>50</sup> His daily progress can be charted because he kept note of the dates. On October 10, he set the corner to sections 7, 12, 13, and 18 T105N R24/25W, thus he had travelled 28 miles from the territorial line in four days. The following day he surveyed 3 miles, finishing by setting the corner to sections 25, 30, 31 and 36 T106N R24/25W. The next day he surveyed 8 miles, finishing by setting a witness corner, 7.5 links south of the true corner to sections 13, 18, 19 and 24 T08N R24/25W. The next day, October 13, he set the corner to T108/109N R24/25W, having travelled 3 miles.<sup>51</sup> He wrote of the country, "The southern part of the line is over a level prairie, the soil of which is the richest & best character. Skirts of timber could be seen approaching the line on each side & it will be doubtless soon be wanted for purposes of agriculture. There are also strong indications of coal at no great distance from the surface all along the line. The northern quarter of the line runs through a dense forest of valuable timber & tho (sic) its soil is not as rich as the adjacent Prairie will be wanted for settlement."<sup>52</sup> He signing his affidavit on November 28.

Norris and his crew Simpson, Decker, Wells and Foster chainmen, Edward Palmer axeman, and Alonzo Foster flagman continued the third guide meridian between October 14-29 north from T108/109N, reaching the right bank of the Mississippi near an Indian encampment on October 25.<sup>53</sup> Finally, he established standard parallels four and five. First, he ran a true line east along the south side of T117N R21W intersecting the Fort Snelling Military Reserve boundary on October 27, 1853 at 42.64 miles, 420 links north of the corner of sections 19 and 30 T25N R24/25W of the 4<sup>th</sup> Principal Meridian and set a post.<sup>54</sup> Then, he ran the fifth standard from the corner of T120/121N R24/25W eastwards on a true line to the Mississippi, completing it on October 28.<sup>55</sup> He wrote, "The tract of country traversed by the foregoing lines is all covered with a dense growth of timber & the abounding in marshes & lakes it is well adapted to the purposes of agriculture."<sup>56</sup>

On October 21, the Surveyor General made his annual report for the fiscal year 1852-1853. Glossing over some of the problems with the surveys carried out by Norris he wrote,

As soon as the necessary arrangements and calculations could be made, after the receipt of your instructions of 16<sup>th</sup> May last, I entered into a contract with E. L. Norris, deputy surveyor, for the establishment of guide meridians Nos.1, 2, and 3, and the proper standard parallels east of said meridians Nos.1 and 2, in the Territory of Minnesota, west of the Mississippi river. From causes entirely unforeseen, the surveys in this portion of my district have not advanced with such rapidity as might have reasonably been expected. Having required to conduct them after the mode prescribed in Oregon and said method, being entirely new to the deputies in this office, and, moreover requiring the greatest accuracy, it is not surprising that some delay should have occurred, and errors have occasionally been made. Owing to a misconception of your instructions, a great part of the work first done by Mr. Norris has to be re-run. This was occasioned by absence of allowance for the convergence of meridians, which your instructions, and the diagram exhibiting the order of survey, failed to set forth, and from examination of which I was led to infer that a new base was designed after the survey had progressed north to a point where the Mississippi river (the main channel of which is the

present dividing line between East and West Minnesota) will cease to be a meandered stream; and that, thereafter, the surveys east and west of said river would be all conducted in the same order. On reception of your letter of the 16<sup>th</sup> June, stating that such was not your intention, and requiring meridians Nos.1 and 2 to be offsetted, I at once had the necessary corrections made, and feel confident that, for the future, the surveys will progress in this Territory without impediment.

Already have returns been made and submitted of guide meridian No.1, to the Mississippi river, with standard parallels, Nos.1 and 2, east of said meridian; the field notes of guide meridian No. 2 have also been received as far north as the corner to townships Nos. 108 and 109, and of the first standard parallel east of said meridian, with all proper township boundaries east of said guide meridian No.2, to the Mississippi river, and south of the first standard parallel.<sup>57</sup>

On October 23 Lewis awarded William Ashley Jones a contract to run the first standard parallel, between the second and third guide meridian. Jones surveyed the line in October, running a random line west and correcting eastwards and wrote, "This standard parallel passes mostly over rolling prairie, much of which is wet but all is fit for cultivation except the marshes. The soil is all 1<sup>st</sup> rate. Timber very scarce."<sup>58</sup>

On November 1 Lewis awarded Norris two contracts; one to establish the second standard parallel between the second and third guide meridians and the other to establish the third standard parallel between the second and third guide meridians and township lines. It took Norris and his crew, comprising Edward Palmer and Stephen Hart as chainmen, John Foster axeman, and Charles Horton flagman, ten days, from November 21-30 to run the second standard. He first ran a random line from the third guide east intersecting the second guide at 42 miles 160 links 200 links north of T109N R17/18W. He corrected westwards 5 links per mile.<sup>59</sup> He wrote of the country, "the tract traversed by this line is generally level. The soil is an excellent quality & it is well watered by the tributaries of the Cannon River. It is also well timbered & is therefore well adapted to agricultural purposes & will be immediately settled."<sup>60</sup>

On November 28<sup>th</sup> he made a return to Lewis, writing,

Accompanying please find field notes of survey of that portion of Guide Meridian No 2 that before returned also of No. 3 up to Standard Parallel No 2 and Standard parallel No 2 & 3 from the 2<sup>nd</sup> Guide Meridian East to the first Guide Meridian and Standard Parallel No 3 from Guide Mer. No 2 East to the Mississippi River. I regret that I have been detained from making these returned for several weeks by cloudy weather and sickness. I trust they will be found to be correct.<sup>61</sup>

In a postscript he noted, "I ought perhaps to say that the difference in the length of the 1<sup>st</sup> and 2nd Standard Parallels is accounted for by the fact that the 1<sup>st</sup> is on open prairie and 20 miles of the 2<sup>nd</sup> through Hack, Oak & Aspen thickets of the worst character."<sup>62</sup>

Norris did not establish the third standard parallel between the second and third guide meridians until the following year. It took him 16 days, from July 13-29, 1854.<sup>63</sup> He ran a random line westward and corrected back east.<sup>64</sup> Part of this line was resurveyed by John Ryan.<sup>65</sup> Obviously John Ryan was in the field already when Lewis asked him to correct a portion of the line. The

survey, run “pursuant to instructions from Warner Lewis,” was not dated. Ryan began the resurvey at the corner of T112/113N R17/18, on the second guide and ran a random line westwards setting temporary corners, intersecting the corner to T112/113N R24/25W on the third guide at 42 miles 70 chains, 12 chains 18 links north.<sup>66</sup> He corrected eastwards, 18 miles, line between R24W and R21W. Strangely, there was no mention of any evidence of the surveys carried out by Norris.

## Conclusion

The Oregon Manual of 1851 and ancillary instructions from the Commissioner of the General Land Office required Surveyor General Warner Lewis to run guide meridians and standard parallels before any townships exteriors were run in western Minnesota. On June 2, 1853 Lewis awarded Elisha S. Norris a contract to establish both meridians and parallels. The special instructions to Norris were amended sometime after June 24 when Lewis received further directions from the Commissioner on how the guide meridians and standard parallels were to be run. Unsurprisingly perhaps, Norris had difficulties completing his work. Apparently he corrected some of the errors pointed out by the individual appointed to examine his work, William Neely. Apparently another deputy also corrected the errors. None of his field notes, with the exception of the western portion of the third standard, the last one established, seem to have been corrected or superseded, however.

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<sup>1</sup> “Standard Parallels and Guide Meridian in Western Minnesota” Minnesota Surveyor v.16, 2 (Summer, 2008) pp.27-34.

<sup>2</sup> The field notebooks will be a subject of a future article. I am not at all sure that I have seen all the relevant correspondence and thus the story of these surveys may be incomplete. In addition, I am unable to reconcile a number of discrepancies between the correspondence and the field notes. Norris had some difficulties and his work had to be corrected. Only a small portion of his field notes are superseded by corrected notes, however, those of John Ryan. I would have expected Norris notes to have been struck through if subsequently corrected. Similarly, the Surveyor General himself asked John Ball, who was establishing townships in southeast Minnesota, to correct some of the work and, in fact, Ball wrote that he had corrected the work and sent Lewis the notes. I can find no record of those notes. Finally, Norris was awarded additional contracts after he had completed his contract to establish the guide meridian and standard parallels; hardly the reward one would expect from a careless deputy!

<sup>3</sup> The Manual was not seen.

<sup>4</sup> Diagram A not seen

<sup>5</sup> A portion of this letter was printed in the previous article, supra note 1 p.30. This is a copy of a letter transcribed by Don Borcharding several years ago from a letter in “Letters Sent by the Surveyor General of Wisconsin and Iowa, Iowa Secretary of State Land Records, Record Group 81.” My research shows a gap in the collection of letters sent between May 9, 1853 and December 5, 1853. Clearly my research is incomplete.

<sup>6</sup> For the letter see article cited supra note 1 p.30.

<sup>7</sup> For the letter see article cited supra note 1 pp.30-32. Here is a case then when there are four sets of instructions; general instructions and specific instructions from the Surveyor General to the deputy;

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instructions from the Commissioner of the General Land Office to the Surveyor General; and thus amended special instructions from the Surveyor General to the deputy. See Rod Squires, "Some Preliminary Thoughts on Instructions for Surveying the Public Lands in Minnesota." Minnesota Surveyor (Summer, 2007) 16-18, 20-21, 23.

<sup>8</sup> Diagrams A and B not seen.

<sup>9</sup> Part of this letter was quoted in the previous article, supra note 1 p.33. This letter was also transcribed by Don Borcharding.

<sup>10</sup> Errors were supposed to be corrected at the deputy's own expense.

<sup>11</sup> Without the diagrams depicting the letters to which Lewis refers there's no way of knowing for certain whether Norris followed the instructions.

<sup>12</sup> Without the diagrams depicting the letters to which Lewis refers there's no way of interpreting the paragraph starting, " The portion of the fourth standard parallel ..."

<sup>13</sup> This letter comes from "Letters Sent by the Surveyor General of Wisconsin and Iowa, Iowa Secretary of State Land Records, Record Group 81" but I have no knowledge of the volume and page number.

<sup>14</sup> Id. There is more to the letter although I have not seen it.

<sup>15</sup> The field notes can be found in Vol.8 of the field notebooks, Secretary of State records Box 111.J.1.3B at the History Center.

<sup>16</sup> Id. p.25

<sup>17</sup> Id. p.50

<sup>18</sup> Id. p.62. On December 27, 1855 Thomas Gilmore would continue the Guide Meridian, past the meander post established by Norris and over the ice to survey the island in the River approximately a mile upstream from Wabashaw.

<sup>19</sup> Id. p.68

<sup>20</sup> Vol.13 of the field notebooks, Secretary of State records Box 111.J.1.4F

<sup>21</sup> The dates in the field notebook do not make sense. There is a two month gap between when he finishes the first gap from Why was there such a delay?

<sup>22</sup> Id. p.25

<sup>23</sup> Clearly there is a discrepancy in the dates.

<sup>24</sup> Was there a gap of 40 chains between the closing corner to T104N R4/5 and the standard corner to T105N R4/5?

<sup>25</sup> Id p.68

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<sup>26</sup> Id. p.79

<sup>27</sup> Letters Received Secretary of State Land Records, Record Group 81 Box 60. Iowa State Archives.

<sup>28</sup> Id.

<sup>29</sup> William A Jones was a deputy awarded a contract to establish townships in southeastern Minnesota. He also established the first standard parallel between the third and second guide meridian.

<sup>30</sup> Letters Sent. Secretary of State Land Records, Record Group 81. Volume F December 5, 1853 – April 25, 1857 Iowa State Archives. Some of the references, to the work of Jones and to the parallels west of the first guide, seem misplaced since Norris had not yet established them.

<sup>31</sup> Transcribed letter from Don Borcharding, supra note 1.

<sup>32</sup> Vol.12 of the field notebooks, Secretary of State records Box 111.J.1.4F

<sup>33</sup> Id. p.4

<sup>34</sup> Id. p.18

<sup>35</sup> Id. p.25

<sup>36</sup> Id.

<sup>37</sup> Id. p.26

<sup>38</sup> Id. pp.27-68

<sup>39</sup> Letters Received Secretary of State Land Records, Record Group 81 Box 60. Iowa State Archives

<sup>40</sup> Vol. 27 of the field notebooks, Secretary of State records Box 111.J.1.4F

<sup>41</sup> Id. p 25. I do not know what a “Plumb stone” is.

<sup>42</sup> Id. p.42

<sup>43</sup> Id. p.43

<sup>44</sup> Id. p.44

<sup>45</sup> Letters Received Secretary of State Land Records, Record Group 81 Box 60. Iowa State Archives

<sup>46</sup> Vol.22 of the field notebooks, Secretary of State records Box 111.J.1.4F pp. 2-43

<sup>47</sup> Id. p.44

<sup>48</sup> Id. p.73

<sup>49</sup> Letters Received Secretary of State Land Records, Record Group 81 Box 60. Iowa State Archives

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<sup>50</sup> Vol.33 of the field notebooks, Secretary of State records Box 111.J.1.4F

<sup>51</sup> Id. pp.28-45

<sup>52</sup> Id. pp.50-51

<sup>53</sup> Vol.52 of the field notebooks, Secretary of State records Box 111.J.1.4F

<sup>54</sup> Id. p.99

<sup>55</sup> Id. p.110

<sup>56</sup> Id. p.113

<sup>57</sup> United States, Congress, Senate. Annual report of the Commissioner of the General Land Office for 1853. S.Exec.Doc. 1 33rd Congress, 1st Session Serial Set 690, pp. 221-222

<sup>58</sup> Vol.34 p. 45 of the field notebooks, Secretary of State records Box 111.J.1.4F

<sup>59</sup> Vol.47 of the field notebooks, Secretary of State records Box 111.J.1.4F pp. 1-42

<sup>60</sup> Id p. 43

<sup>61</sup> Letters Received from the Commissioner of the General Land Office 1852-1856. Secretary of State Land Records, Record Group 81 Box 60. Iowa State Archives.

<sup>62</sup> Id.

<sup>63</sup> Vol. 49

<sup>64</sup> This was the first time he corrected eastwards.

<sup>65</sup> In vol. 49 several pages are struck through with a red lines with a note “see Ryan’s resurvey.”

<sup>66</sup> Vol. 72 p.1.

**THE FIRST TOWNSHIPS IN WESTERN MINNESOTA TERRITORY.** Rod Squires, University of Minnesota

**Introduction**

In two previous articles I described how the guide meridians and standard parallel were established west of the Mississippi River in Minnesota Territory.<sup>1</sup> These surveys, like those carried out earlier in Iowa, used the 5<sup>th</sup> Principal Meridian and the Arkansas Baseline for locational control but they were technically different. The deputies awarded contracts to establish them were directed to use the Oregon Manual, first issued on March 3, 1851, aimed at providing “simplicity, uniformity, and permanency,” to the public land surveys in Oregon and California, a Manual that was supplemented by the instructions contained in several letters.<sup>2</sup> Here I turn my attention to the first township exteriors that were run in western Minnesota, by William A. Jones under contracts awarded July 4 and 13, and John Ball, under contracts awarded June 9 and August 12, even as Elisha Norris was establishing the guide meridians and standard parallels. (Figure 1)

<b>Contract Date</b>	<b>Deputy</b>	<b>Date Surveyed</b>	<b>Vol. No.<sup>3</sup></b>
June 4	William A Jones	Jan. 29 – Feb 5, 1854	3
June 4	William A Jones	July 1853	4
June 4	William A Jones	June – July, 1853	5
June 4	William A. Jones	June, 1853	6
June 4	William A. Jones	June, 1853	7
June 9	John Ball	June 19-24, 1853	9
June 9	John Ball	June 19-24, 1853	10
June 9	John Ball	June 19-24, 1853	11
July 13	William A Jones	Aug. 10-18, 1853	14
July 13	William A Jones	?	15
July 13	William A Jones	July 31-Aug 10, 1853	16
July 13	William A Jones	July 20-July30, 1853	17
August 12	John Ball	Affidavits certified by Ball Oct. 19,1853	18
August 12	John Ball	Affidavits certified by Ball Oct. 19,1853	19
August 12	John Ball	Affidavits certified by Ball Oct. 19,1853	20
August 12	John Ball	Affidavits certified by Ball Oct. 19,1853	21

Figure 1. Contracts awarded to Jones and Ball under the Appropriations Act of March 3, 1853<sup>4</sup>

The two deputies ran the exterior lines following the instructions contained in the Oregon Manual supplemented by instructions contained in two letters from John Wilson, the Commissioner of the General Land Office. The first, dated July 10<sup>th</sup> 1852 and addressed to Surveyor General Sargent, accompanied “sundry copies of the Manual of Instructions to Deputy Surveyors in Oregon with copies of the Illustrations connected therewith,” a year after the Manual was issued but before any surveys had been carried out under its provisions in Minnesota Territory.<sup>5</sup> In the letter the Commissioner amplified the provisions in the Manual regarding standard parallels. Importantly, he instructed Sargent to establish check or guide meridians, which were in fact not mentioned in the Manual, before running such parallels while giving him

discretionary power over how to actually run them. Although he made no specific mention of township exteriors both standard parallels and check meridians, of course, would comprise part of those lines. The second letter, dated May 16, 1853, was addressed to Warner Lewis, who succeeded Sargent as Surveyor General.<sup>6</sup> The Manual, along with the two letters and the subsequent special instructions from the Surveyor General to the deputies who were awarded contracts, changed the way in which the township exteriors were established in Minnesota Territory. Unfortunately, the special instructions are not to be found but the field notes of the deputies describe how the townships were established.<sup>7</sup> But the field notes suggest that the two followed slightly different procedures in establishing townships. John Ball, who carried out surveys between the 1<sup>st</sup> and 2<sup>nd</sup> Guide Meridians, clearly followed the Oregon Manual, running his exterior lines westwards and northwards. William Jones, however, who carried out surveys east of the 1<sup>st</sup> Guide Meridian did not follow the Oregon Manual; he could not because the Manual did not mention check or guide meridians. Without any evidence to the contrary, I suggest that Jones used the 1<sup>st</sup> Guide as a supplemented Principal Meridian from which he established the township lines eastwards and northwards.

### **Township Exteriors in the General Instructions of March 3, 1851 (Figure 2)**

In the 1853 letter, and remember no surveys had yet been carried out in western Minnesota under the provisions of the Manual issued two years earlier, the Commissioner stated that the surveys in western Minnesota would count, “from the Arkansas Base, and from the Fifth Principal Meridian in continuation of those in Iowa - the townships therefore will all count, North of the Base Line, and the ranges West of the Fifth Principal Meridian.”<sup>8</sup> All such townships would be established in the following manner. The deputy was first to run the western exterior of the township by running a line one mile northwards on “a true meridian” from the southwest township corner that lay on the standard parallel and formed the southern township exterior, “establishing the mile and half-mile corners thereon,” and set the northwest corner. He was then to run a random line eastwards “setting temporary mile and half-mile stakes” to a previously established line that formed the eastern exterior of the township and set a temporary township corner. If the

random line materially falls short, or overruns in length, or intersects the eastern boundary of the township at any considerable distance from the true corner thereon, (either of which would indicate an important error in the surveying,) the lines must be retraced, even if found necessary to remeasure the meridional boundaries of the township (especially the western boundary,) so as to discover and correct the error; in doing which, the true corners must be established and marked, and the false ones destroyed and obliterated, to prevent confusion in future; and all the facts must be distinctly set forth in the notes.<sup>9</sup>

He was then to correct the line westwards back to the northwest corner previously set, “establishing the mile and half-mile permanent corners on said line” thus establishing the northern exterior township line and completing the township exterior.<sup>10</sup> He was then to run the western and northern exteriors of the next township north in a similar manner and continue to the next standard parallel north.<sup>11</sup> When running the western exterior line that would intersect the standard parallel he was to place any “excess over, or deficiency under, four hundred and eighty

chains” into the last half-mile.<sup>12</sup> At the intersection between the exterior and the standard parallel he was to set a closing corner and note the distance between it and the standard corner established previously.<sup>13</sup> In cases where the standard parallel had not yet been established he was to set a township corner that could be corrected when the parallel was established.<sup>14</sup> In the Manual, then, townships were established one at a time from one standard parallel northwards to another.<sup>15</sup> After establishing a range of township between two parallels, the deputy was to move one range westwards and establish exteriors between the parallels, continuing to move one range west until he finished his contract.<sup>16</sup>

Commissioner Wilson’s letter to Sargent’s successor, Warner Lewis, dated May 16, 1853, further elaborated on the instructions contained in the Manual.<sup>17</sup> He wrote,

Starting from any township corner on a standard parallel, or correction line previously established, the township, or townships on the north, and between it and the correction line, above, will be laid off, on the Oregon method, according to diagram A. (see Figure 2)

The township surveys will start from the appropriate correction line as their practical base, and be closed on the one above it.

The corners for the townships, sections and quarter sections, which will close from below on the correction line, will constitute a double set of corners on such lines, and every where else double corners are inadmissible.<sup>18</sup>

So each standard parallel was to be used as a local baseline from which township exteriors would be run northwards and against which township exterior would close from the south.<sup>19</sup> Similarly, each check, or guide, meridian would be used as local meridian from which lines would be run.<sup>20</sup> The Commissioner also wrote,

On these guide Meridians, the township, section, and quarter section corners are to be established after the methods prescribed for the Oregon surveys; and such meridians to regulate the subsequent surveying operations, are to be run with the aid of the Burt's Solar Compass, and with the greatest possible care and precision chained with great accuracy, and the corner boundaries, whether mounds or posts, established and identified in the best and most enduring manner.<sup>21</sup>

# Diagram A<sup>1</sup>

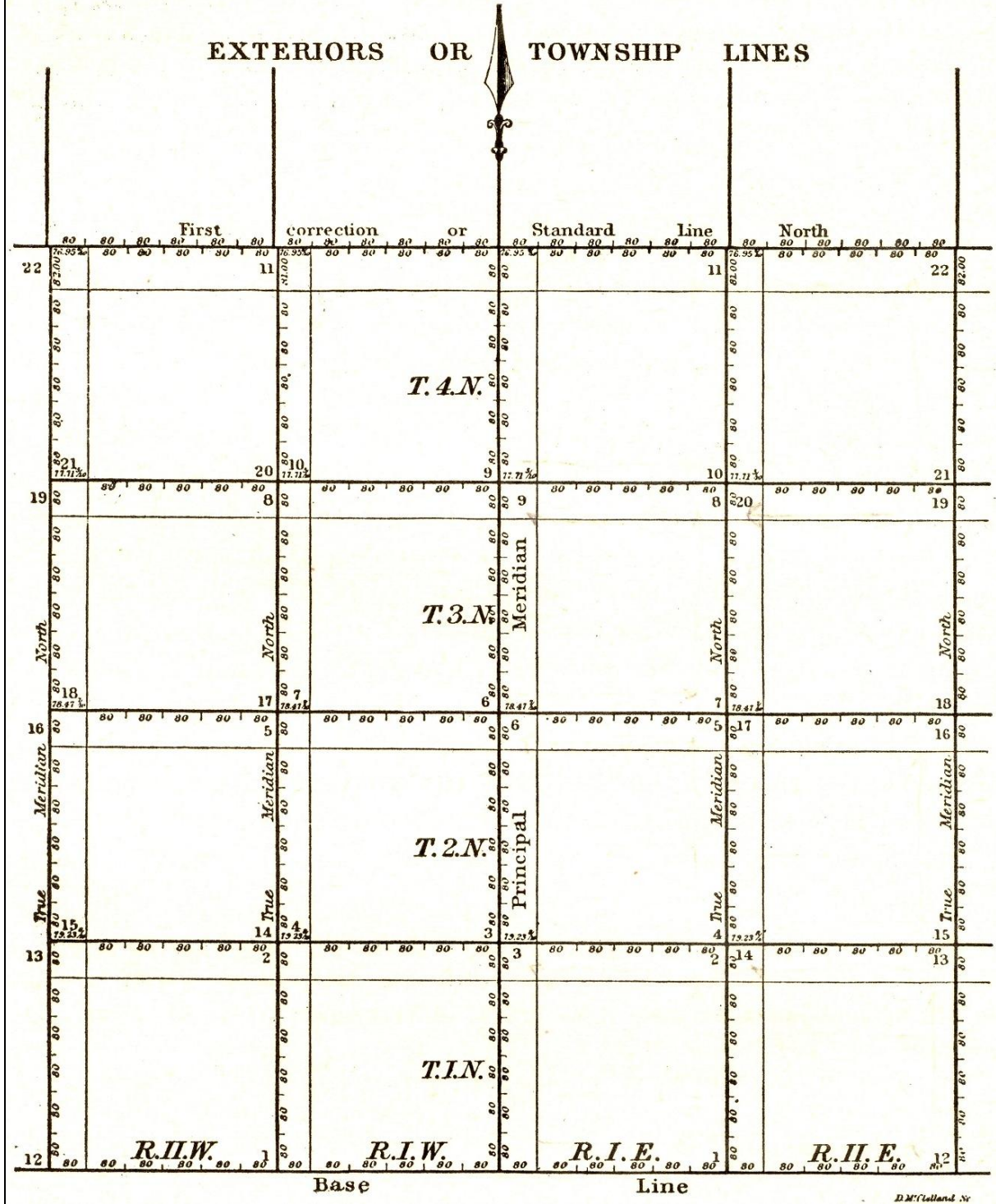


Figure 2. Diagram A from the 1851 Manual <sup>22</sup>

The distance to which any one correction line is to be run out, at a single operation under a contract, is to be determined by circumstances. It may be run to the extent of one, two, three, four, five, six, or seven townships according to the locality of the body of land to be reached, and which it is desired to township and subdivide from it, as the practical base. Neither is it indispensably necessary to run the exteriors of all the four townships in width between any two correction lines at a single operation under any one contract. The township exteriors may be extended either one, two, or three townships north of a correction line leaving the residue for a future operation.<sup>23</sup>

Surprisingly, the Commissioner gave Lewis no directions on how to close township lines either against guide meridians or against streams. Apparently, as was previously the case, Lewis and his deputies were supposed to use their own best judgment to follow the instructions and modify them according to the obstacles that they encountered.<sup>24</sup> Thus there would still be some variation in the way in which some exterior line segments would be run.

Importantly, in terms of where the surveys would spread, the Commissioner wrote,

The starting of the correction lines must be so managed as to provide for the townshipping and subdividing of the lands in those special localities where the settlements most abound, so as to accommodate as far as we can, the greatest number of settlers, at the earliest period, making the existing appropriation available to the greatest practicable extent.<sup>25</sup>

.... The correction line may start from any fourth township corner station on the Meridian, and be run either to the East of it or to the West, according to circumstances so as to embrace the locality which it is particularly desired to have townshipped in advance of the great body of the surveys; and the facility thus afforded for so doing, will enable your Deputies to operate simultaneously on a number of township surveys, however detached from each other; and hence, by a conscientious observance by each deputy of all the principles prescribed, the whole work (detached as it may be in the first instance) ought and will ultimately be found to harmonize and fit together, with the entire connected surveys have been completed in the Territory.<sup>26</sup>

He warned, however,

In prairie regions where mounds have to be constructed to signalize the corner boundaries, it is all important that the surveys be made before the frost set in, otherwise the mounds will not endure.<sup>27</sup>

## **The Field Notes**

There are several problems with merely using the field notes to describe how the deputies carried out their work. One problem is that the volumes of the field notes may not be numbered in a sequence that reflects when township were established. (Figure 3) Thus, for example, the field notes of the standard parallels and guide meridians completed by Norris, the first surveys in western Minnesota, are found in volumes numbered 5, 8, 11, 12, and 13. In the case of John Ball,

notes of the township exteriors he ran under his contract of June 9, 1853 are found in volumes numbered 9-11 and those he ran under his contract of August 12 are found in volumes 18-21, all numbered according to the sequence in which he ran the lines. In the case of William Jones, however, volumes 5-7 contain the notes of the lines he ran in reverse chronological order. Furthermore, volumes 1- 4 show no chronological sequence. Another problem is that the dates of the surveys are not always recorded in the field notes despite the fact that the Manual specifically stated,

The nature of the subject matter of the field book is to form its first and title page, showing the State of Territory where the survey lies, by whom surveyed, the date of commencement and the date of the completion of the work.<sup>28</sup>

The deputies were able to fulfill these contracts independently because their bases, the standard parallels and guide meridians, had already been established.

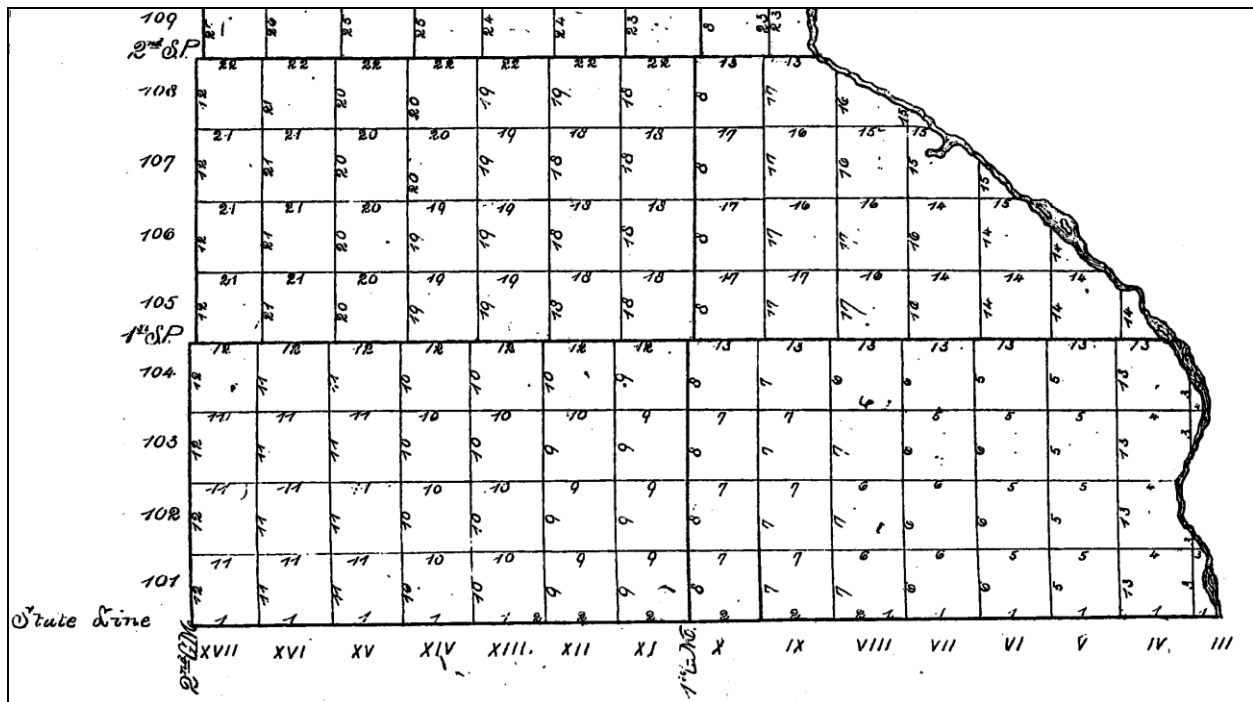


Figure 3. Index to Volumes Containing Township Exterior Field Notes.<sup>29</sup>

### Township Lines run by William A. Jones

On June 4, 1853 Surveyor General Lewis awarded William A. Jones a contract to establish townships in south eastern Minnesota Territory east of Guide Meridian No. 1 and south of the 1<sup>st</sup> Standard Parallel. (Figure 4) He ran his lines in two phases. He started his work, running lines northwards from the Territorial Boundary to the 1<sup>st</sup> Standard Parallel and eastwards from the 1<sup>st</sup> Guide Meridian to the township line run between R4/5 by Norris to “anchor” the 1<sup>st</sup> Standard Parallel during June and July, 1853 in the sequence shown, lines 1-38.<sup>30</sup> Clearly, he ran his lines

northwards and eastwards although the Manual instructed deputies to establish township northwards and westwards. Without the special instructions nothing more can be said, however, Jones actions make perfect sense since the 1<sup>st</sup> Guide Meridian had already been established. He apparently followed the procedures laid down in the Manual for townships north and east of the initial point, thus treating the 1<sup>st</sup> Guide as a supplementary Principal Meridian and the Territorial boundary as a supplementary Baseline for surveying purposes although not for actual locational proposes.<sup>31</sup> Jones did not complete his contract until several months later. He extended his township exteriors east of R4/5 to the right bank of the Mississippi and northwards to the 1<sup>st</sup> Standard in January and February 1854, perhaps after the River valley bottom was frozen, in a complex manner – even running the line between T103N R3/4W southwards – and without running a random line westwards, as he had done in his earlier surveys, seemingly retracing some of the lines he had already established, see lines 1-9.<sup>32</sup> (Figure 4)

On July 13, apparently while working on his first contract, he received another contract to establish townships between the 1<sup>st</sup> and 2<sup>nd</sup> Standard Parallels and east of the 1<sup>st</sup> Guide Meridian, immediately to the north of those on which he was working. He was obviously running two field crews at the time. He ran his lines northwards and eastwards, lines 1-22 in Figure 4, as he had done earlier, July 20 and August 10.<sup>33</sup> He then completed his work to the Mississippi, once again in a complex fashion, line segments 1-11, finishing on August 18, 1853.<sup>34</sup>

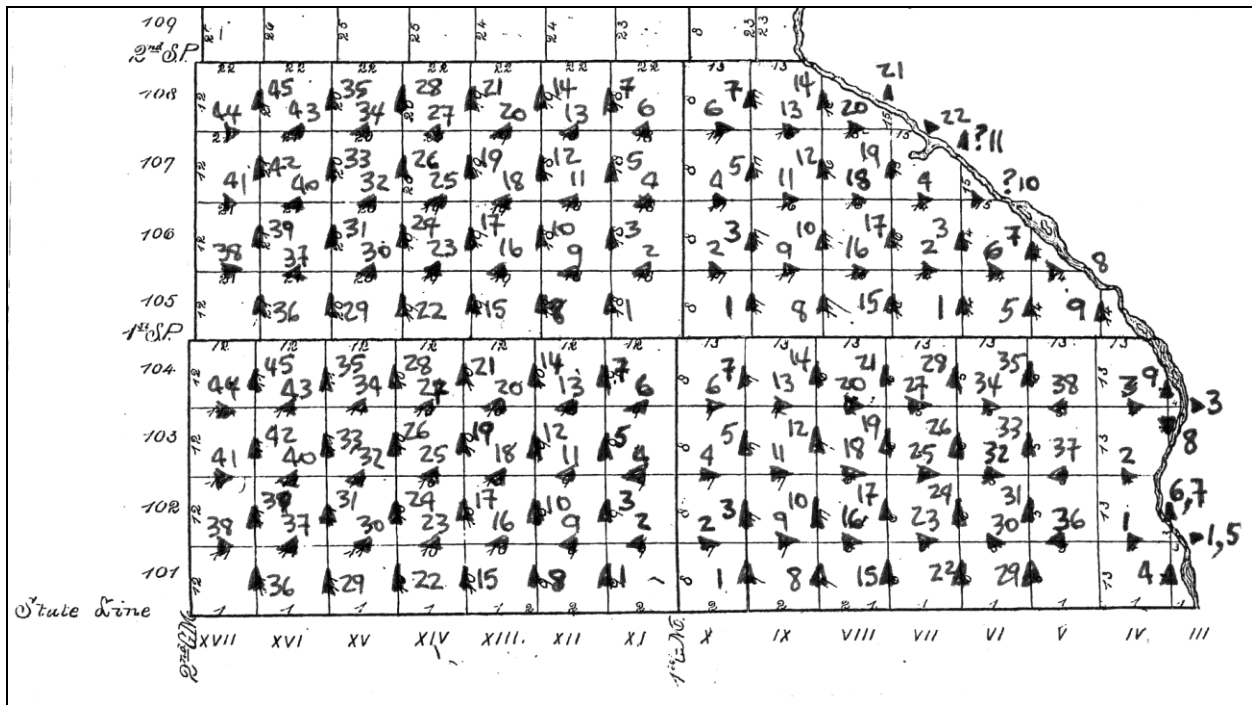


Figure 4. The Sequence in which Jones and Ball ran Townships Exteriors

Clearly, and inevitably, the ideal method of running the township exteriors described in the Manual could not always followed, in this case because of the course of the Mississippi River.

## Township Lines run by John Ball

The Surveyor General awarded a contract to John Ball to establish townships between Guide Meridians No. 1 and 2 and south of the 1st Standard Parallel, four days after awarding Jones his first contract. Apparently Ball completed his contract, line segments, 1-45 in Figure 4, in five days from June 19-24, 1853.<sup>35</sup> He followed the procedures described in the Oregon Manual outlined above, running his lines northwards and westwards. Obviously, though, he had to improvise when closing his line to the 2<sup>nd</sup> Guide Meridian, since the Manual made no mention of guide meridians.

On August 12, he received another contract to run township exteriors between Guide Meridians No. 1 and 2 and north of the 1st Standard Parallel, immediately to the north of those he had just completed.<sup>36</sup> I am not certain when he ran the lines but he certified the affidavits of his surveying crew on October 19, 1853 probably in the field immediately after completing the work. The sequence in which he completed his work, line segments 1-45, virtually replicated his previous work.

## Conclusions

Surveyor General Warner Lewis awarded a three types of contracts for surveying in Western Minnesota under the Appropriations Act of March 3, 1853: for establishing standards and parallels, for establishing townships, and for subdividing townships. All contracts were to be carried out using the instructions described Oregon Manual issued two years previously, instructions that had been amplified by at least two letters from John Wilson, the Commissioner of the General Land Office. Deputy surveyors William A. Jones and John Ball received the first contracts to run township exteriors in southeastern Minnesota. The way in which they completed their work, while illustrating some of the characteristics that would characterize future land surveying, showed that there may have been considerable variation in the way in which individuals followed those instructions. The Manual neither provided for all circumstances the deputy would face and the surveyors general still retained authority to deviate from them under certain circumstances. Small wonder, in his first annual report dated October 21, 1853 Surveyor General Lewis wrote, "(h)aving been required to conduct them (surveys) after the mode prescribed in Oregon, and said methods being entirely new to the deputies of this office, and, moreover, requiring the greatest accuracy, it is not surprising that some delay should have occurred, and errors occasionally made."<sup>37</sup>

The field notes describe how the deputies carried out their contracts; more precisely how they allege they carried out their contract. But the information they contain is made more valuable when used in conjunction with the various instructions, including the special instructions, that were given to the deputies.

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<sup>1</sup> "Standard Parallels and Guide Meridian in Western Minnesota" Minnesota Surveyor v.16, 2 (Summer, 2008) pp.27-34; "Standard Parallels and Guide Meridians in Western Minnesota: The surveys of Elisha Norris" Minnesota Surveyor v.16 3 (Autumn, 2008) pp.27-36.

<sup>2</sup> White, C. Albert, A History of the Rectangular Survey System (Washington D.C. Government Printing Office, 1982) p.115 noted that on October 23, 1851, the Surveyor General of Wisconsin and Iowa,

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George B. Sargent, was directed to use the Manual in running range lines north to the correction lines and establishing closing corners although I have not been able to locate this letter in the National Archives Microcopy 27 Letters Sent by the General Land Office to Surveyors General, 1796-1901. Copies of the Manual were sent to the Surveyors General in Louisiana and Arkansas, and used to control the construction of corner mounds White Id. Sargent's successor in the office, Warner Lewis, was also instructed to use the Manual. White Id. p.116 .I do not know whether other surveyors general used the 1851 Manual. Presumably those appointed after March 1851, when the Manual was issued, but before it was reissued on February 22, 1855, used it – in Washington established in 1854, New Mexico established in 1854, and Nebraska and Kansas established in 1854.

<sup>3</sup> Minnesota, Secretary of State, Land Survey Field Notes, Minnesota Historical Society, State Archives

<sup>4</sup> Data from “Annual Report of the Surveyor General of Wisconsin and Iowa” October 21, 1854 Senate Executive Document No. 1 Second Session, 33<sup>rd</sup> Congress. Serial 746 pp.198-201.

<sup>5</sup> The letter, which instructed Sargent to use the Oregon Manual to establish closing corners, can be found in M27 Letters Sent by the General Land Office to Surveyors General, 1796-1901 v.15 pp.2-5. Remember the surveying district included Iowa and Wisconsin in addition to Minnesota Territory.

<sup>6</sup> The 1853 letter can be found in M27 Letters Sent by the General Land Office to Surveyors General, 1796-1901 v.15 pp.291-297

<sup>7</sup> Importantly, the Manual allowed deviations from the normal procedures of establishing township where necessary. White, supra note 2 pp.436-437.

<sup>8</sup> The instructions can be found in White supra note 2 pp.446 et seq. The letter can be found in M27 v. 15 pp.291-297. The Manual specified the procedures for establishing townships based upon where the lines to be run were located with respect to the initial point created by the intersection of the Principal Meridian and the Baseline. According to the letter, townships in western Minnesota lay in the north west quadrant and so only that part of the Manual concerning such townships is relevant.

<sup>9</sup> White supra note 2 p.446. Interestingly, it seems as though deputies were to correct any errors they found in previous surveys at their own expense.

<sup>10</sup> Both the eastern and southern exteriors of the township were presumed to have been run so new townships were established to the north and west of those previously established.

<sup>11</sup> It is clear on reading the instructions that the southern exterior was meant to be a standard parallel so that there is some indication that deputies would be awarded contracts for surveying township exteriors from one standard parallel to another. This reading is justified by the letter from Commissioner Wilson to Lewis described below.

<sup>12</sup> White supra note 2 p.446

<sup>13</sup> Id.

<sup>14</sup> Id.

<sup>15</sup> Township exteriors were thus established in a very different manner than those in eastern Minnesota described in the 1846 instructions, see Squires, Rod “The first township exteriors in Minnesota”

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Minnesota Surveyor v.15 4 (Winter 2207-2008) pp.17-20, 22-23, 25-27; “A geography of township exteriors in Minnesota Territory, 1847-1852” Minnesota Surveyor v.16 1 (Spring 2008) pp.8-10, 27-34

<sup>16</sup> Future contract were awarded to establish a particular number of townships unlike townships under the 1846 instructions where lines were run between two points. In his letter of May 16, 1853, Commissioner Wilson wrote,

The contracts for township exteriors, should not exceed eight townships, and it is always desirable that the sectional surveys should be established by another Deputy than he who run the township exterior, to act as a check on the work, and such rule must be observed wherever practicable.

M27 supra note 6

<sup>17</sup> Id.

<sup>18</sup> Id.

<sup>19</sup> Id. See Squires, Rod “Comments on the Instructions to Deputy Surveyors in Minnesota, 1847-1860” Minnesota Surveyor v. 2,1 (Winter, 1995) pp.12-16; also Squires supra note 1

<sup>20</sup> M27 supra note 6. The Manual of 1851 contains no reference to check or guide meridians. In fact, the term “guide meridian” does not appear in any Manual until 1881.

<sup>21</sup> Id.

<sup>22</sup> White supra note 2 p. 436. Surprisingly, White does not include this diagram in his transcribed copies of the 1851 Manual. He does include it in his copy of the 1855 Manual, however, see pp.494-497.

<sup>23</sup> M27 supra note 6

<sup>24</sup> Id.

<sup>25</sup> Id.

<sup>26</sup> Id. Note that only correction lines could be surveyed eastwards or westwards from the Meridian and it is presumed this means Principal Meridian. Note also there is an explicit suggestion that township lines could be separated geographically - detached.

<sup>27</sup> Id. There had long been a concern that the deputies were not building corner mounds correctly. Wilson had written several letters over the years complaining about this. In the July 10, 1852 letter to Surveyor General Sargent he wrote, “Before your deputy surveyors depart for the field of duty it is deemed proper that you should require each of them to construct in your presence a monument of the character required in those instructions, as a pattern to which, when their work is returned, their oath is to declare that the mounds they have erected conform.” M27 supra note 2

<sup>28</sup> White, supra note 2 p.443

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<sup>29</sup> This index is part of the Secretary of State Collections at the Minnesota History Center, supra note 3.

<sup>30</sup> Volumes 5-7, supra note 3

<sup>31</sup> See White supra note p.446 and Figure 2 above

<sup>32</sup> Jones stated in his notes “The quality of the land in these townships is under the common acreage, the western part being hilly and broken, the eastern part on the Mississippi bottoms and islands being low and marshy, not fit for cultivation on account of an annual inundation of from 2 to 6 feet. The timber is chiefly oak and the upland ash, elm, maple, sugar and hickory on the bottom land and islands.” Volume 3 no page number supra note 3.

<sup>33</sup> Volumes 17 and 16 and the first part of vol. 15 supra note 3.

<sup>34</sup> Volumes 15 and 16 supra note 3.

<sup>35</sup> I can only report the dates I found in the field notebooks

<sup>36</sup> Probably the Surveyor General was delighted at the speed with which Ball worked!

<sup>37</sup> United States, Senate, Message from the President of the United States to the two Houses of Congress, at the commencement of the first session of the Thirty-third Congress. December 6, 1853. S.Exec.Doc. 1 33d Congress, 1st Session (1853) Serial 690. Contains the Commissioner of the General Land Office, Annual Report for 1853. p.221.

## THE INDEPENDENT MERIDIAN IN NORTHEASTERN MINNESOTA

Rod Squires, University of Minnesota

### Introduction

The public land survey lines spread across Minnesota according to necessity. First, township exteriors were run from exteriors that had already been established so as to preserve the integrity of a geometric net and the national system of locational control. Then, townships were subdivided according to the actual or perceived value of the land to prospective landowners; those with high value being subdivided before those that possessed lower value.

The earliest surveys in the area between the St. Croix and Mississippi rivers were geographically separated from those that had already been carried out further to the east.<sup>1</sup> They required a Third Correction Line be established from the Fourth Principal Meridian to the Mississippi.<sup>2</sup> This line, run by Henry A. Wiltse in August 1847, allowed James M. Marsh and other deputies, J. E. Whitcher, James E. Freeman, John M. Smith, and Theodore Conkey to establish township exteriors between the St. Croix and Mississippi.<sup>3</sup> In 1853 the first surveys west of the Mississippi were carried out, across land ceded by Dakota bands two years earlier. These surveys required a series of guide meridians and standard parallels be established north of the northern boundary of Iowa and between the Third Guide and the Mississippi.<sup>4</sup> These lines, run by Elisha S. Norris, allowed William A. Jones and John Ball to run township exteriors in southeastern Minnesota.<sup>5</sup>

Here, I report on the start of surveying in the northeastern part of Minnesota Territory, an area that was isolated from the main body of the early surveys and therefore required lines that would connect future surveys with those already carried out. (Figure 1)

### The Surveys

In his annual report dated October 21, 1855 Warner Lewis, the Surveyor General of Wisconsin and Iowa, drew the attention of Thomas Hendricks, the Commissioner of the General Land Office, to the area ceded by the Chippewas two years previously in northeastern Minnesota.<sup>6</sup> He wrote,

In view of the great interest manifested in this section, not only by actual settlers, but by people of the east, it is necessary that provision should be made without delay for its early survey.

.... repeated applications have been made for these surveys, and within the last few days I have obtained reliable information from a gentleman direct from the country as to the settlements in this region, and the necessity for immediate survey of at least a portion of it. He informs me that from the Knife rapids of the St. Louis river to its mouth, and bordering the lake shore on the north, settlements extend almost continuously to the grand portage at Pigeon river. As they are yet confined principally to the lake shore and its vicinity, I would recommend that the line, between ranges 15 and 16, be run on a true meridian, from the corner to townships 41 and 42 and that it

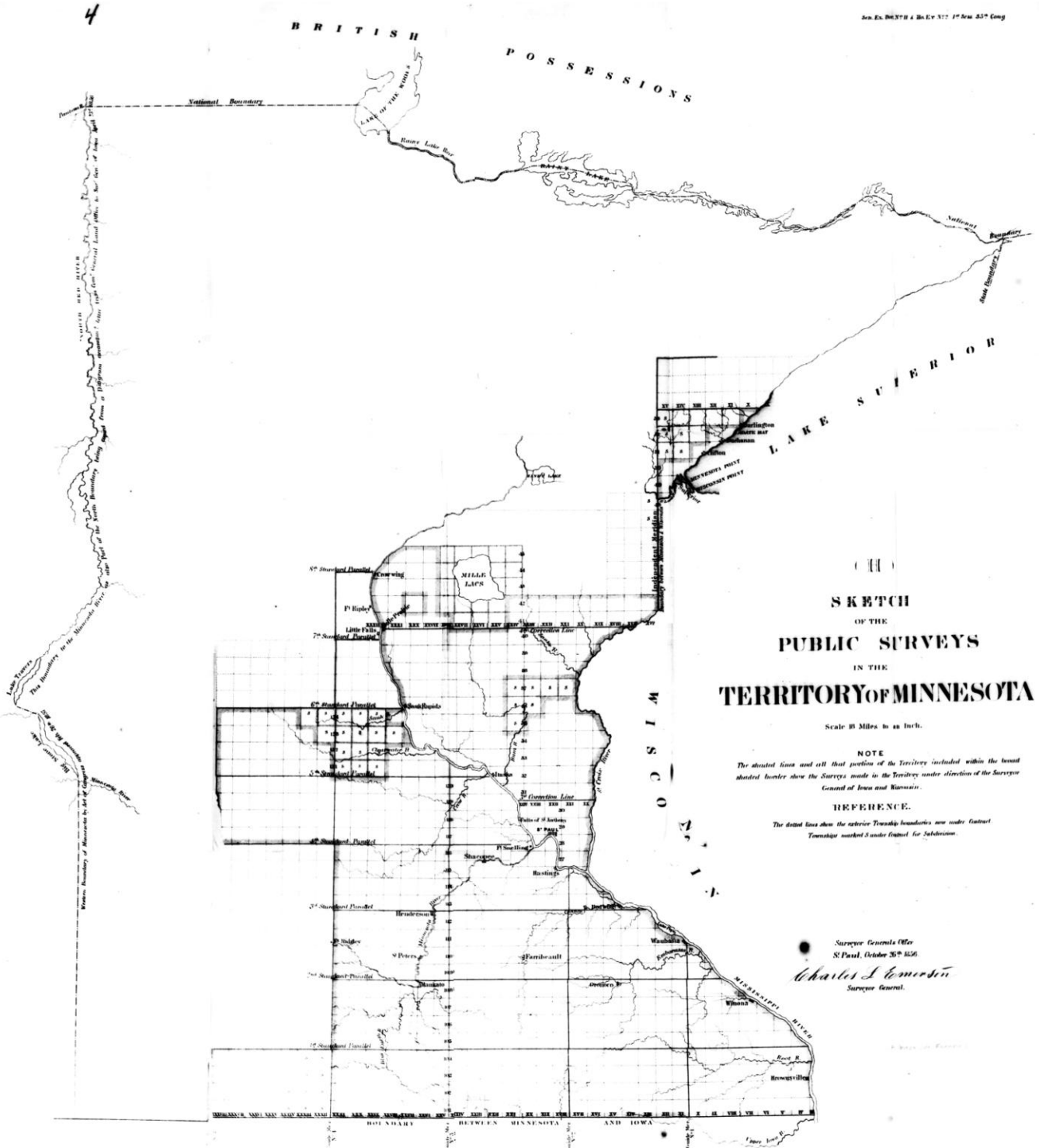


Figure 1. Map from the Annual Report of the Surveyor General of Minnesota, 1857<sup>7</sup>

be extended for ten townships, north of the corner to townships 46 and 47; from thence a line run due east would intersect the lake below the mouth of Pigeon river, and from the lines thus established the surveys could be closed to Lake Superior. This would, I think, cover all settlements at present made, and is all that, in my opinion, is absolutely required to be done the next season.<sup>8</sup>

At the same time, he alerted the Commissioner to the problems of surveying in northern Minnesota, writing,

You are, without doubt, aware that in this high northern latitude every moment of favorable weather must be improved in prosecuting surveys, from the fact that little reliance can be placed upon the needle, owing to the presence of magnetic trap rock, so prevalent in this section. The solar compass, therefore is the only instrument that can be used; and as the solar apparatus can only be employed in bright weather, and not then through the entire day, at certain periods, the whole season, which is but short at best, is greatly reduced.<sup>9</sup>

The following year, on April 8, 1856, John M. Moore, Principal Clerk of Surveys, wrote to Lewis, with specific instructions for surveying in the Lake Superior region.

As the surveys in the Lake Superior region should be commenced at the earliest practicable period of the coming season, you will therefore make your preparations accordingly for extending a meridian line from the corner of township 41 & 42 as far as Township 56N and from the North East corner of township 55 & 56 respectively cause correction parallels to be extended East to Lake Superior – the convergency in these high latitudes rendering two such parallels expedient. In extending such Meridian you will order it to be duly offsetted from such Corner to make due acreage allowance for convergency – and the same also between the parallels – and on such meridian and parallels the proper quarter section, section, and township corner boundaries, will of course be duly established in the most permanent manner.

The townships from No. 42 to the St. Louis river, Minnesota being all fractional, will when subdivided, be made to close on the boundary line between Minnesota & Wisconsin as will also those portions of the same fractional townships lying on the Wisconsin side.

On the north shore of Lake Superior and on the left bank of the St. Louis river, the exteriors of as many townships are to be contracted to be surveyed as will embrace existing settlements, and as many of the same to be subdivided, the coming season as can be accomplished by the most active energies of your deputies.<sup>10</sup>

A month later, on May 21, the Surveyor General awarded William A. Burt a contract to establish an Independent Meridian, between R15 and R16W 4<sup>th</sup> Principal Meridian, from the northeast corner of T42N to the northeast corner of T56N, two correction lines, the 6<sup>th</sup>, running eastwards from the Meridian to the shore of Lake Superior between T53N and T54N and a portion of the 7<sup>th</sup> that would run eastwards from the Meridian between T56N and T57N. He was also

contracted to establish townships on the left bank of the St. Louis River between the Meridian, the Lake shore and the 6<sup>th</sup> Correction. (Figure 2)

On May 26, Lewis wrote to Burt, then in Detroit,

I herewith return you one copy of your Contract and Bond approved, with diagrams of the district assigned you, blanks for your assistants' oaths, blank books for your field notes, and my printed Several Instructions to deputy Surveyors. By reference to said diagram you will perceive that you are to commence the survey of your district at the corner to Townships No. 41 & 42 North, Rgs 15 & 16 West 4<sup>th</sup> Mer., and from thence run an independent meridian north to the corner to towns 56 & 57 closing the frac. township lines east of you to the boundary between Wisconsin & Minnesota, (indicated on the diagram by a black line) (the field notes of which you will also find enclosed) and noting your intersections with the nearest corner thereon precisely as you would in closing to a correction line.

You are also to survey correction lines from the corner to townships No. 53 & 54 and 56 & 57 respectively due East to Lake Superior making the usual allowance of 3 chs. on the West half of sec. 31 in each township to provide for convergence. Your township lines closing to the left bank of the St. Louis river & to Lake Superior may be run South & East where necessary. It is expected you will make returns of the work at the earliest practicable day, with a full report as to the character of the country, extent of settlement & c. and indicate those townships that in your opinion should be earliest subdivided, also as to the necessity for townshipping the tract situated between the two correction parallels which you are to survey. If possible an advance return of part of the work should be made, in which event it will be necessary to forward a signature for your acct. with directions where to send a draft.<sup>11</sup>

In addition, Lewis asked Burt to survey the boundaries to the two Indian reservations established in the treaty of September 30, 1854 for the Fond du Lac band and the Grand Portage band, if the "season be not too far advanced," after finishing the lines.<sup>12</sup>

Burt seems to have completed his work in several stages. First he ran the Meridian from T41/42N R15/16W to T52/53N R15/16W.<sup>13</sup> He then established township exteriors between the Meridian and Lake Superior north of the St. Louis River. Somewhat surprisingly, he ran township lines further north than he had run the Meridian. He then ran the Meridian six miles north, then ran the 6<sup>th</sup> Correction Line to the Lake and then ran a township exterior to the Lake. He then continued the Meridian northwards to T56/57N R15/16W and finally ran 24 miles of the 7<sup>th</sup> Correction Line.

### **The field notes**<sup>14</sup>

On June 14, 1856 William A. Burt started the Meridian, as instructed, from the northeast corner of T42N R16W that lay 14.12 chains south of the St. Croix in Wisconsin, a corner set by James E. Freeman under a contract awarded July 9, 1849.<sup>15</sup> Setting a meander corner, he continued across the river at 17.71 chains "on line & set post offset 87 links west."<sup>16</sup> He ran the six miles northwards, establishing corners every half-mile, and set the corner to T43N R15/16W. He then

ran a line eastwards, intersecting the boundary between Wisconsin and Minnesota Territory established several years earlier by George R Stuntz, at 27.95 chains 21.35 links south of the 35<sup>th</sup> mile post.<sup>17</sup>

Vol	Type of work	Dates <sup>18</sup>	Comments
149	Meridian T42N-T52N	June 14-July 9, 1856	Termed "Independent Meridian"
160	Exteriors	July 18-Aug 11	Remeasurement November 1856
161	Exteriors	Aug 12-Sept 22	Additional work, October 9
162	6 <sup>th</sup> Correction	Sept 25-Oct 9	
165	Meridian T53N-T56N 7 <sup>th</sup> Correction	Sept 24-Oct 15 Oct 15-28	Not termed Independent Meridian

Table 1 The field notes made by William A. Burt

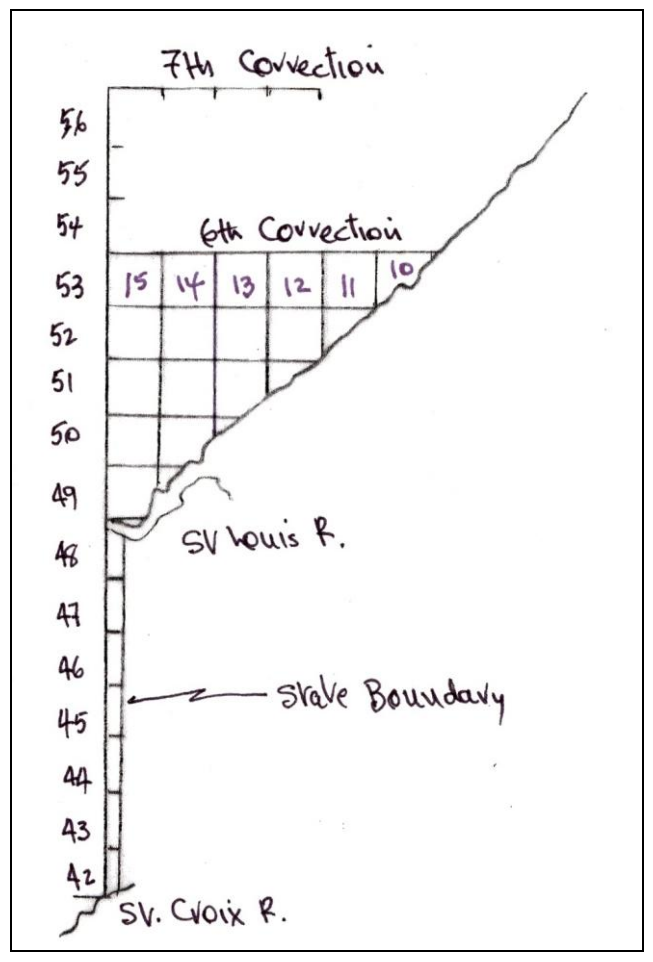


Figure 2. Lines to be Established Under Contract May 21, 1856

Continuing the Meridian northwards he established the corner to T43N R15/16W and then went eastwards establishing the northern exterior of T43N R15W to the Minnesota Territory boundary, some 28.35 chains on June 18.<sup>19</sup>



Figure 3 The Sequence in which Burt established

Alternating between running the Meridian northwards and the township line eastwards to the territorial boundary, Burt ran the Meridian to the St Louis River, which he intersected at 23.84 chains between sections 1 and 6 in T48.<sup>20</sup> He continued over the River, 4.63 chains wide at that point, setting the corner to T48/49N R16W on June 27.<sup>21</sup> He then merely continued the Meridian northwards, since the Minnesota-Wisconsin boundary ended at the River, arriving at the corner to T52/53N R15/16W on July 9 and signing his field notes on July 19, 1856. In his affidavit he noted,

I have regularly surveyed and established the following line (Independent Meridian) situated West of the Fourth Principal Meridian in the Territory of Minnesota, Viz line between Ranges 15 & 16 of Townships 42 & 43 & 44 & 45 & 46 & 47 & 48 & 49 & 50 & 51 & 52 also line between Townships 42 & 43 & 44 & 45 & 46 & 47 & 48 of Range 15.<sup>22</sup>

Burt then turned his attention to establishing township exteriors between the Meridian line he had just completed and Lake Superior north of the St. Louis River.<sup>23</sup> The way in which he ran the lines is shown in Figure 3 Remember, in the instructions from Lewis, Burt was given permission to run his township lines south or east as necessary. He started sometime around July 18 running the southern boundary of T48/49N eastwards intersecting Lake Superior at 56.20 chains. He added more notes that he made in March 1857, several months after he first established the township lines. The additional notes, headed “Measured on the ice (emphasis in original),” were made necessary by his subsequent work. As he noted on the back of the additional page,

At the time of surveying the line between Township 48 and 49 North Range 15 West, Minn Terry, it was supposed the main channel of the river was reached but in making the survey of subdivisions of Township 48 Range 15 it was found that the line went across a bay to a point of land extending a considerable distance down St. Louis River. The Township line was accordingly extended to the main channel of the river (the foregoing field notes).<sup>24</sup>

He then ran the township exterior between T49/50 eastwards intersecting the Lake 31.31 chains east of the corner to T49/50N R14W on July 19, noting that, “The distance from “Rice’s point” to “Minnesota point” was examined by repeated triangulation and Trigonometrical calculations.”<sup>25</sup> As he approached the lakeshore his notes described the conditions as “wet miry marsh, oozy and treacherous...” Interestingly, as he intersected a Bay of the St. Louis River, he set an meander post using a Tamarac as a witness and rather imprecisely noted its location as “E about 200 links.” Again somewhat vaguely he noted “at about 50 chains are three or four loose miry “Floating Islands” in and near the Town line; unfit for cultivation.”<sup>26</sup>

He then ran south to the River on July 21 and then north the following day ending at the corner to T50/51N R14/15W.<sup>27</sup> Surprisingly, he then ran a trial line westwards between T50/51N R15W to the Meridian on July 24 and 25. He wrote, “West trial line between Ts 50 and 51 N North Range 15 West and intersected Meridian line 38 links North of post at 6 miles and 78 links. Small Tally sticks & other marks were made & the notes afterwards recorded in the same manner as if the line had been completely finished at the time of running said trial line.”<sup>28</sup> He then ran northwards between R14/15 setting the corner to T51/52N R14/15W on July 26. Next he ran eastwards from T50/51N R14/15W, setting the corner to T50/51N R14/13W on July 26 and intersecting the Lake. He then ran south establishing the line between T50N R13/14 to Lake Superior July 29. Then he ran north establishing the line T51N R13/14W and established the corner to T51/52N R13/14W. Then he went on a trial line west to the Meridian, setting temporary corner to T51/52N R14/15W.<sup>29</sup> He then ran north between R14/15W establishing corner T52/53N R14/15W August 7 and north between R13/14W establishing the corner T52/53N R13/14W August 11.<sup>30</sup>

From August 12- September 22 he continued establishing township lines as shown in Figure 3.<sup>31</sup> In a note he wrote,

In consequence of the Township Lines East having progressed North of the posts on the Meridian, it was thought best to run West & keep the work Square – or in other words run mainly parallel to the south boundary of the Township.<sup>32</sup>

Then Burt seems to get creative, presumably in the interests of practicality. On September 24 he runs the Independent Meridian northwards six miles, from the corner T52/53N R15/16W to the corner to T53/54N R15/16W.<sup>33</sup> The following day he starts the 6<sup>th</sup> Correction Line from the Meridian, at the corner of T53/54 R15/16, running eastwards to Lake Superior which he intersects on October 9, approximately 36 miles from the Meridian.<sup>34</sup> He then runs a township line south from the 6<sup>th</sup> Correction line between R9/10 to the Lake.<sup>35</sup> On October 12 he continued the Meridian northwards establishing the corner to T56/57N R15/16W on October 15.<sup>36</sup>

He finally runs the 7<sup>th</sup> Correction Line from the Meridian to the corner of T56/57N R11/12W which he sets October 28.<sup>37</sup>

## Correspondence

Surveyor General Lewis wrote to Burt on June 22 seemingly more concerned about whether Burt would be able to survey the reservation boundaries as requested, although noting, presumably in

response to a suggestion by Burt, who was probably still in the field

The object of adding 3 chains to the West half of Sec. 31 on the correction lines is as you are aware to provided for convergency of Meridians. Your suggestion is therefore approved.<sup>38</sup>

On August 5, 1856 Lewis was able to write to Hendricks, the Commissioner of the General Land Office, "In compliance with your request I would report that I have contracted for the survey of the district on the St. Louis river & lake Superior mentioned in your letter of the 8<sup>th</sup> of April last  
<sup>39</sup>  
 ....

Later that month, on August 26, Lewis addressed another letter to Burt writing,

Your letter of the 18<sup>th</sup> instant with field notes has just come to hand. You state that "great anxiety is manifested to have certain townships on the shore of Lake Superior and the. Louis river surveyed." & that you designated the same in a former letter. Said letter has never come to hand. In order however that the wants of settlement may be accommodated I hereby authorize you to survey and subdivide into sections such townships as in your opinion it is most desirable to have surveyed, provided you can do so without interference with your present district and complete the whole by the 1<sup>st</sup> Febry. I have for the purpose of facilitating matters forwarded blank contracts & bonds which you can sign and forward to your friends at home for their signatures to the Bonds and you will be pleased to instruct them to forward to this office without delay and at the same time you can designate the townships which you intend to survey.<sup>40</sup>

In what would be his final annual report dated October 13<sup>th</sup> 1856, Lewis noted that he had awarded a contract to William Burt to establish the Meridian, Correction lines, and other township exteriors and that the work had already been forwarded to Washington DC. He wrote,

In the Chippewa Cession the district of Township lines indicated by your letter of instructions was let to Mr. William Burt who has already executed a portion of the work which has been forwarded for your approval. Special instructions were also prepared for the Survey of the Indian Reservation in the vicinity but owing to the inability of the Indian agent to attend to the business I fear that it will be impossible to execute the surveys this season. I am confident however that Mr. Burt will do all in his power to comply with the wishes of the department.<sup>41</sup>

In another letter he wrote, Burt's work, "bordering the north shore of Lake Superior, about which so much interest has been manifested."<sup>42</sup> He continued, "A glance at the plats forwarded to your office is sufficient to the value of this entire district, many townships of which are wholly claimed, and the settlers, I am informed, have been waiting impatiently the opening of the land office, to prove up and obtain legal possession of their claims."<sup>43</sup>

On March 6, 1857 Lewis wrote to Hendricks

I have to acknowledge the receipt of your letter of the 26<sup>th</sup> ult stating that "urgent

representations have been repeatedly made to your office of the inattention on my part to the requirement of settlers along the St. Louis river” and to your instructions of the 8<sup>th</sup> of April last & calling my attention thereto. In reply I assert unqualifiedly that such representations are wholly untrue, and whoever made the same is either totally ignorant or willfully malicious. For proof it is only necessary to state that there is on file in this office, a contract for the subdivision into section of 14 townships bordering the St. Lois river & Lake Superior copy of which is enclosed) & not only has said contract been let, but two of said townships are approved and platted & I am daily expecting the notes of three others which the deputy promised to have written up & forwarded some time since and this is not all for a US deputy is now and has been all winter on the ground, in order that not a day that was possible to improve on the inclement season might not be taken advantage of to accommodate the wants of settlers & further the views expressed by your office. You are well aware of the difficulties to be encountered in surveying the district alluded to and also that before even the township lines could be started a long Standard Meridian had to be carefully established. Still the whole district has been finished with the exception of a few miles of the 20 parallel and you have approved & paid for the work. All therefore of the requirements of your letter of the 8<sup>th</sup> of April last have been completed with that time & season would permit save or the survey of the Indian Reservations therein .... (not complete)<sup>44</sup>

In a final piece of correspondence on June 21, 1857 Warner Lewis, Surveyor General of Wisconsin and Iowa in Dubuque, wrote to Charles Emerson, newly appointed Surveyor General of Minnesota,

Your letter of 15<sup>th</sup> is received. In reply thereto I have to state that according to the Comms instructions of the 8<sup>th</sup> of April last (copy of which was forwarded to you on Saturday) an Independent Meridian was started from the N.E. corner of Town 41 Range 16 West 4<sup>th</sup> Mn and surveyed due North to the corner of Town 56 & 57 & from the corners to Town 53 & 54 respectively. Correction lines were run east, the first named to Lake Superior & the last to the corner of Ranges 11 & 12 (copies of the field notes of which were all forwarded to you on the 19<sup>th</sup> inst.)

As you have been pleased to ask my views in relation to continuing the surveys on the north shore of lake Superior, I would state that in my opinion it would be advisable to start another Independent Meridian at the corner to Ranges 8 & 9 on correction line between Town 56 & 57 (or any other township corner further East) and run it north a sufficient distance to cover any surveys you may desire to make, starting correction lines as suggested by the Comms at the corner to every third township

This is merely a continuation of the course already adopted, and I think it will enable you better than any other to continued the surveys in the manner you have designated.

Any papers or information in the possession of this office that you may wish to

acquire shall be promptly furnished on your application.<sup>45</sup>

## Conclusion

The Third Correction Line allowed the surveys to begin in the area between the St. Croix and Mississippi rivers, an area geographically separate from other surveys in 1847. In a similar manner, the Independent Meridian was established in 1856 to allow the public land surveys to start in northeastern Minnesota Territory, an area that was separated from the main body of land surveys in the Territory at that time. The instructions given to William Burt, the deputy awarded a contract to run the line, and the field notes he kept, allow anyone to reconstruct the way in which he carried out his work.

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<sup>1</sup> See Figure 1 Squires, Rod. “The first township exteriors in Minnesota” Minnesota Surveyor vol.15 No.4 (Winter 2007-2008) p.18.

<sup>2</sup> Ibid. At the time the surveys around the confluences of the St. Croix, Mississippi and Minnesota rivers were separated from the other surveys that had taken place further east in Wisconsin Territory.

<sup>3</sup> Ibid. Squires, Rod. “A geography of township exteriors in Minnesota Territory, 1847-1852” Minnesota Surveyor vol.16 No.1 (Spring 2008) pp. 8-10, 27-34. Theodore Conkey also ran the Fourth Correction line, see Dahl. John R. United States General Land Office Historical Surveying Instructions and their Influence on Surveys of the 3<sup>rd</sup> and 4<sup>th</sup> Correction Lines, 4<sup>th</sup> Principal Meridian, Minnesota (Unpub. MS thesis, St. Cloud State University, 2006).

<sup>4</sup> Squires, Rod. “Standard parallels and guide meridians in western Minnesota” Minnesota Surveyor vol.16 No.2 (Summer, 2008) pp.27-34; Squires, Rod “Standard parallels and guide meridians in western Minnesota: the surveys of Elisha S. Norris” Minnesota Surveyor vol.16 No.3 (Autumn, 2008) pp.27-36

<sup>5</sup> Squires, Rod “The first townships in western Minnesota Territory” Minnesota Surveyor vol. 16 No.4 (Winter, 2008-2009) pp.27-33

<sup>6</sup> The treaty, signed at La Pointe, Wisconsin, on September 30, 1854, was ratified by the Senate January 10 1855. (10 Stat. 1109) In this treaty two reservations were established, one for the Fond du Lac band of Chippewa and the other for the Grand Portage band of Chippewa.

<sup>7</sup> Accompanying “Annual Report of the Surveyor General of Minnesota, 1857” in United States, Congress, Senate. S.Exec.Doc.11 35<sup>th</sup> Congress, 1<sup>st</sup> Session Serial Set 919 pp 119-136 .

<sup>8</sup> United States, Congress, Senate. Report of the Surveyor General of Wisconsin and Iowa. S. Exec.Doc. 1 34<sup>th</sup> Congress 3<sup>rd</sup> Session Serial 810 p.199. I have to presume that the Meridian was proposed as a necessity; there were no other control lines in the area at the time. In his annual report for the following year, the Secretary of the Interior wrote,

instructions were promptly dispatched for surveys on the northwest shore of Lake Superior ... Subdivisional surveys were also ordered to meet the demands of the numerous settlers. The extension of certain connecting lines have also been ordered for tribal and other Indian reserves ... lying beyond the main body of the contemplated surveys. United States, Congress, Senate. Report of the Secretary of the Interior. S.Exec.Doc. 5 34<sup>th</sup> Congress, 3<sup>rd</sup> Session Serial Set 875 p.208

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<sup>9</sup> United States, Congress, Senate, *supra* note 7

<sup>10</sup> United States, National Archives. Letters Sent by the General Land Office to Surveyors General, 1796-1901 (M27) vol.17 p. 66

<sup>11</sup> Iowa State Archives, Land Records. Letters Sent Letterbook D, 1853-1857 pp.549-551. Note that Burt did not receive any instructions to offset the line as Moore had directed.

<sup>12</sup> *Ibid.*

<sup>13</sup> This line would form the eastern external exterior of the townships to the east and would be the line from which township exteriors would be established westwards.

<sup>14</sup> Minnesota, Secretary of States, Land Survey Field Notes volumes 149, 160, 161, 162, and 165 at the Minnesota Historical Society. An electronic version of the inventory to this collection is available at <http://www.mnhs.org/library/findaids/secst025.pdf>,

<sup>15</sup> Volume 149 carries the heading "Survey of Independent Meridian Made by William Burt under contract dated May 21, 1856" On page 2 of the field notebook is a note. "Mr. Miller (flagman) left my party soon after entering the same, on account of being sick, and unable to work and a flagman being of no use in the thick timbered country, no one has been appointed to fill Mr. Miller's place." In his work he constantly noted that he compared his chain with a standard chain. Interestingly, only Burt's affidavit is present in the book, the affidavits of the rest of his crew are missing. This volume of field notes can be also be found on the Wisconsin Public Land Survey Records web site at <http://digioll.library.wisc.edu/SurveyNotes/> but the origin of these notes is uncertain. Combined in one volume are books 257, noted as a copy, and 258, noted as a "duplicate." Are these copies of the notes in the Minnesota Historical Collections? On pp.98 & 99 of Volume 149 are notes of the last mile of the Meridian in T50N and the first mile of T51N. I can only assume that these notes were omitted at first and copied later. For details of Freeman's survey, see Squires, *supra* note 2.

<sup>16</sup> Vol. 149 p.3 Why he offset the line is unknown.

<sup>17</sup> Wisconsin Book 275 p.26-27. The eastern boundary of Minnesota Territory was run in 1852 by George R. Stuntz under a contract dated March/June 1852. His field notes have been transcribed in vol. 148 of the Minnesota field notes. The mile posts, showing the distance south of the St. Louis River, were established by George Stuntz as he ran the boundary southwards. Subsequently, the township lines east of the boundary, in Wisconsin, would be run westwards to close on the boundary line.

<sup>18</sup> Dates taken from the entries in the notebooks. See text for a better chronology

<sup>19</sup> Volume 149 p.18.

<sup>20</sup> *Ibid.* p.54 There is no mention of any offsets

<sup>21</sup> *Ibid.* p 71 The most northerly township exterior he ran eastwards measured 34.58 chains long and intersected the boundary line 21.46 links south of the 5<sup>th</sup> mile post on June 25. *Ibid.* p.62-63

<sup>22</sup> Wisconsin Book 275 p.101

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<sup>23</sup> Vol 160

<sup>24</sup> Ibid. Addition to page 7

<sup>25</sup> Ibid p.20

<sup>26</sup> Ibid. p.19

<sup>27</sup> Ibid. p.29

<sup>28</sup> Ibid p.30 Apparently he ran a trial line and then decided to use it as the true line.

<sup>29</sup> In the notes are comments similar to those he made earlier, see note 27. Reading the notes it seems obvious that the corners called temporary, in actual fact, became permanent.

<sup>30</sup> In the notebook Burt noted a remeasurement of the line between T49/50N R14W from the corner to section 3, 4, 33, 34 eastwards to lake in November 1856 Ibid. p.91

<sup>31</sup> Vol.161

<sup>32</sup> Ibid p.95.

<sup>33</sup> Vol 165 p.5-10

<sup>34</sup> Vol 162 pp.3-38

<sup>35</sup> The notes for this township line appear in Vol. 161 p.97. but commons sense suggests that Burt ran the line which was the only township line still to be run south of the 6<sup>th</sup> Correction Line after he ran the Correction Line

<sup>36</sup> Vol 165 pp17-30. In fact the line is never referred to as "Independent Meridian." That portion of the Meridian forming the east exterior of T55N R16W was retraced by George F. Hamilton under a contract dated August 18, 1880.

<sup>37</sup> Ibid pp.39-63. The Correction Line was continued to the Lake by George E. Adair in the following year.

<sup>38</sup> Iowa State Archives, Land Records. Letters Sent Letterbook D, 1853-1857 p.556. The letter was addressed to Burt at Superior Wisconsin

<sup>39</sup> Ibid. p.565

<sup>40</sup> Ibid. p.568. I have not looked at the subdivisions made by Burt

<sup>41</sup> United States, Congress, House. H.Exec.Doc.1 34th Congress, 3rd Session Serial Set 893 p.252

<sup>42</sup> Iowa State Archives supra note 38 pp. 589-590

<sup>43</sup> Ibid

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<sup>44</sup> Ibid 622-623

<sup>45</sup> Iowa State Archives, Land Records. Letters Sent Letterbook E, 1857-1864 p.20

**THE FIELD NOTEBOOKS OF THE DEPUTY SURVEYORS IN MINNESOTA**  
Rod Squires University of Minnesota

**Introduction**

All deputy surveyors who received contracts to survey the public lands in Minnesota were required to record what they did and what they saw in field notebooks. After completing the work specified in a particular contract, a deputy returned the notebooks to the surveyor general's office with an affidavit stating that he had followed all applicable instructions. In the office draftsmen used the data in the notes to create a township plat and the notes were subsequently transcribed and recorded.<sup>1</sup> At the same time the notes were checked to ensure they were accurate and they did, indeed, comply with the applicable instructions. Finally, a descriptive list, describing the reference trees for each corner in a particular township, was made.<sup>2</sup> A copy of the township plat and the descriptive list was sent to the appropriate land district office where they were available to be inspected by any prospective landowner. The transcribed notes, along with a copy of the township plat, was sent to the Commissioner of the General Land Office where both would be checked again and the deputy responsible for the subdivision paid for his work.<sup>3</sup> (Figure 1)

**Commissioner, General Land Office**

**Plat, Transcribed notes**

**Surveyor General**

**Plat, Descriptive List**

**Contracts, Notebooks  
Instructions**

**Land District Officer**

**Deputy**

Figure 1 The flow of information contained in the field notebooks

The notebooks contain priceless information that cannot be replaced. Without the notes the work completed by the deputy surveyors cannot be recreated and hence the corners they

established cannot be remonumented so that the provisions laid down in the Land Act enacted by Congress on February 11<sup>th</sup> 1805 are a nullity.<sup>4</sup>

In this article I describe what the general instructions that are most relevant to the public land surveys in Minnesota, those issued by George A. Jones, the Surveyor General of Wisconsin and Iowa in 1846 and those issued by the General Land Office in 1851, stated the notes should contain. I also provide a description of how to access these materials now contained in the Minnesota History Center, many of which have been placed on the Minnesota Historical Society web site. In view of the current concerns about acquiring digital copies of these notebook I also describe the efforts of the efforts of several other states in making these notes mores widely available.

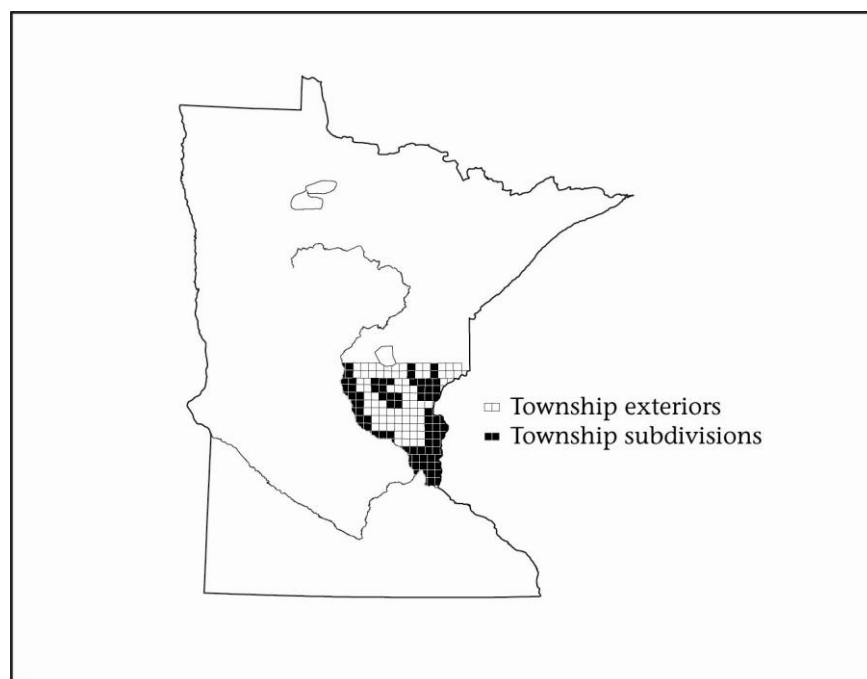


Figure 2. Surveys Completed 1847-1852

### **The Contents of the Field Notes, 1846-1852** (applying to the surveys shown in Figure 2)

George A Jones, Surveyor General of Wisconsin and Iowa, issued a set of General Instructions on May 28<sup>th</sup> 1846.<sup>5</sup> In the instructions are the following provisions,

1. Your field notes are to form a full and perfect history of your operations in the field.
2. The field notes of the subdivision of every township, whether fractional or not, are to be written in a separate book.
3. No one page, either of the notes of township lines or subdivision, is to embrace the field notes of more than one section line.
4. Description of the timber, undergrowth, surface, soil and minerals, upon each section line, is to follow the notes thereof, and not to be mixed with them.
5. The language of your field notes must be so concise and clear, the hand in which they are

written so plain and legible, that no doubt can exist as to your figures, letters, words or meaning.

6. No abbreviations are to be made in your field notes, except such as relate to course, to express which, the proper combinations of the capital letters, N. S. E. and W. are to be used; except when a course is exactly to a cardinal point, in which case it is to be written full.
7. The description of each mile must be independent, and not refer to a preceding description.
8. The date of each days work must follow immediately after the notes thereof.
9. The variation is invariably to occupy a separate line.
10. The first page of a field book of subdivision – a sample of which will be shown or furnished you by this office – is to embrace only the township and range, State or Territory, name of the deputy, with the dates at which the survey was commenced and finished. The head of each subsequent page will express the township, range and meridian.
11. The second page will contain the notes of your resurvey of the first mile, both of the south and east boundaries of your township; stating the corner at which you commence, the variation you assume, and each corner with which you close.
12. All rivers, creeks and other streams, lakes, ponds, prairies, swamps, marshes, groves, hills, bluffs, windfalls, roads and trails, are to be distinguished in your field notes by their original and received names, only; and where such names cannot be ascertained or do not exist, your imagination is not to supply them.
13. Immediately following your field notes, you will give a general description of the township.<sup>6</sup>

Deputies were also directed “to enter in their proper places in the field notes”

1. The length and variation or variations of every line you run.
2. The name and diameter of all bearing trees, with the course and distance of the same from their respective corners.
3. The name of the material of which you construct mounds, with the course and distance to the pits.
4. The name, diameter and exact distance to all those trees which your lines intersect.
5. At what distance you enter, and at what distance you leave every river, creek or other “bottom,” prairie, swamp, marsh, grove or windfall, with the course of the same at both points of intersection.<sup>7</sup>

Then followed a list of topographic features and characteristics the deputies were to note and finally,

18. All offsets or calculations by which you obtain the length of such parts of your lines as cannot be measured with the chain.
19. The precise course and distance of all witness corners from the true corners which they represent.<sup>8</sup>

At the end of the instructions deputies were directed to write a general description of the area and provide an affidavit, a notarized statement by he and his crew carried out the work “in strict conformity to the laws of the United States, and the instructions of the ...Surveyor General.”<sup>9</sup>

In the instructions is an example of the field notes showing how the deputy should establish township exteriors. These were probably not actual notes – the way in which they were run does not appear to conform to the actual instructions on how the township exteriors were to be run.<sup>10</sup>

Surveyor General Jones apparently issued a second set of instructions in 1851.<sup>11</sup> This set is similar to 1846 set although items numbered 3, 9, 10, 11 and 13 above are missing. Added to the instructions is the admonition,

9. Your field notes must be kept in the exact form of the specimen herewith furnished you.<sup>12</sup>

**The Contents of the Field Notes 1851, the Oregon Manual** (applying to all subsequent surveys in Minnesota)

The General Land Office issued “Instructions to the Surveyor General of Oregon; Being a Manual for Field Operations, on March 3, 1851.<sup>13</sup> Under the heading “Of Field Books” is the following,

1. The FIELD NOTES afford the elements from which the plats and calculations in relation to the public surveys are made. They are the source wherefrom the description and evidence of locations and boundaries are officially delineated and set forth. They, therefore, must be a faithful, distinct, and minute record of every thing officially done and observed by the surveyor and his assistants, pursuant to instructions, in relation to running, measuring, and marking lines, establishing boundary corners, &c.; and present, as far as possible, a full and complete topographical description of the country surveyed, as to every matter of useful information, or likely to gratify public curiosity.

[These notes must be plainly and neatly written out; be free from blurs, blots, and interlineations; the language precise and clear; the figures, letters, words, and meaning, unmistakeable (sic)]

2. There will be sundry separate and distinct field books of surveys, as follows

Field notes of the MERIDIAN and BASE lines, showing the establishment of the township, section or mile, and quarter section or half mile, boundary corners thereon; with the crossings, of streams, ravines, hills, and mountains; character of soil, timber, minerals, &c. [These notes will be arranged, in series, by mile stations, from number one to number -----.]

[The mile stations will include the operations at the intermediate half mile stations or quarter section corners, and those will be designated 1/4 S. Within each mile station will be shown (or, otherwise, be referred to in another book, to be called the geodetic field book) all the operations appertaining to the station; and each station will exhibit the operations therein, complete in itself, either by insertion or reference.

Wherever the levelling station on line is not the regular mile or half mile station, such will be designated alphabetically, a, b, c, &c. The levelling operations, triangulations from legal stations, and the angles of altitude and depression of the points triangulated to, will be set forth, in full detail, in the geodetic field book.]

3. Field notes of the “STANDARD PARALLELS, or correction lines,” will show the establishment of the township, section, and quarter section corners, besides exhibiting the topography of the country on line, as required on the base and meridian lines.

4. Field notes of the EXTERIOR lines of TOWNSHIPS, showing the establishment of the corners on line, and the topography, as aforesaid.

5. Field notes of the SUBDIVISIONS of TOWNSHIPS into sections and quarter sections; [at the close

whereof will follow the notes of the MEANDERS of navigable streams. These notes will also show, by ocular observation, the estimated rise and fall of the land on the line. A description of the timber, undergrowth, surface, soil, and minerals, upon each section line, is to follow the notes thereof, and not to be mixed up with them.]

The field notes must, in all cases, be taken precisely in the order in which the work is done on the ground, and the date of each day's work must follow immediately after the notes thereof. The variation of the needle must always occupy a separate line preceding the notes of measurements on line.

The exhibition of every mile of surveying, whether on township or subdivisional lines, must be complete in itself, and be separated by a black line drawn across the paper.

The description of the Surface, Soil, Minerals, Timber, Undergrowth, &c., on each mile of line, is to follow the notes of survey of such line, and not be mixed up with them.

No abbreviations of words are allowable, except of such words as are constantly occurring, such as "sec." for "section;" "in. diam," for "inches, diameter;" "chs." for "chains;" "lks." for "links;" "dist." for "distant;" &c. Proper names must never be abbreviated, however often their recurrence.

The nature of the subject matter of the field book is to form its first and title page, showing the State or Territory where the survey lies, by whom surveyed, the date of commencement and date of completion of the work. Between the second and third pages of the line field books a diagram is to be placed, (disconnectedly,) showing the distances on line at the crossings of streams of water, and the direction of each by an arrow head pointing down stream; also the intersection on line by Prairies, Marshes, Swamps, Ravines, Lakes, Hills, and all other matters indicated by the notes, to the fullest extent they can be so illustrated. In the field book of SUBDIVISIONS OF TOWNSHIPS the illustrative diagram will show, in neat and small figures, the length of the section lines, with all objects set forth in the notes; the outlines of the area occupied by timber, prairies, swamps, &c., to be shown, as nearly as may be, by dotted lines.

SUMMARY of objects and data required to be noted:

1. The precise length of every line run, noting all necessary offsets therefrom, with the reason and mode thereof.
2. The kind and diameter of all "bearing trees," with the course and distance of the same from their respective corners; and the precise relative position of WITNESS CORNERS to the true corners.
3. The kind of materials (earth or stone) of which MOUNDS are constructed – the fact of their being conditioned according to instructions – with the course and distance of the 'kits,' from the centre of the mound, where necessity exists for deviating from the general rule.
4. Trees on line. The name, diameter, and distance on line to all trees which it intersects.
5. Intersections by line of land objects. The distance at which the line first intersects and then leaves every settler's claim and improvement; prairie; river, creek, or other "bottom;" or swamp, marsh, grove, and wind fall, with the course of the same at both points of intersection; also the distances at which you begin to ascend, arrive at the top, begin to descend, and reach the foot of all hills and ridges, with their courses, and estimated height, in feet, above the level land of the surrounding country, or above the bottom lands, ravines, or waters near which they are situated.
6. Intersections by line of water objects. All rivers, creeks, and smaller streams of water which the line crosses; the distance on line at the points of intersection, and their widths on line. In cases of navigable streams, their width will be ascertained between the meander corners, as set forth under the proper head.
7. The land's surface-whether level, rolling, broken, or hilly.
8. The soil-whether first, second, or third rate.
9. Timber-the several kinds of timber and undergrowth.

10. Bottom lands – to be described as wet or dry, and if subject to inundation, state to what depth.
11. Springs of water-whether fresh, saline, or mineral, with the course of the stream flowing from them.
12. Lakes and ponds-describing their banks, and giving their height, and also the depth of water, and whether it be pure or stagnant.
13. Improvements. Towns and villages; Indian towns and wigwams; houses or cabins; fields or other improvements; sugar tree groves, sugar camps, mill seats, forges and factories.
14. Coal banks or beds; peat or turf grounds; minerals and ores; with particular description of the same as to quality and extent, and all diggings therefor; (sic) also salt springs and licks. All reliable information you can obtain respecting these objects, whether they be on your immediate line or not, is to appear in the general description to be given at the end of the notes.
15. Roads and trails, with their directions, whence and whither.
16. Rapids, cataracts, cascades or falls of water, with the height of their fall, in feet.
17. Precipices, caves, sink-holes, ravines, stone quarries, ledges of rocks, with the kind of stone they afford.
18. Natural curiosities, interesting fossils, petrifications, organic remains, &c.; also all ancient works of art, such as mounds, fortifications, embankments, ditches, or objects of like nature.
19. The variation of the needle must be noted at all points or places on the lines where there is found any material change of variation, and the position of such points must be perfectly identified in the notes.
20. Besides the ordinary notes taken on line, (and which must always be written down on the spot, leaving nothing to be supplied by memory,) the deputy will subjoin, at the conclusion of his book, such further description or information touching any matter or thing connected with the township (or other survey) which he may be able to afford, and may deem useful or necessary to be known-with a general description of the township in the aggregate, as respects the face of the country, its soil and geological features, timber, minerals, waters, &c.<sup>14</sup>

After these notes the deputy was to provide the requisite affidavits.

These instructions were republished in 1855 as “Instructions to the Surveyors General of Public Lands of the United States, For Those Surveying Districts Established in and Since the Year 1850; Containing, Also, A Manual of Instructions to Regulate the Field Operations of Deputy Surveyors, Illustrated By Diagrams.”<sup>15</sup> The republication was subsequently made part of every deputy surveyor’s contract.<sup>16</sup>

The provisions regarding field notes in the 1855 instruction are similar to those in the 1851 instructions. Omitted are those provisions relating to geodetic surveys – denoted with square brackets [ ] above. The main additions are three paragraphs

The nature of the subject-matter of the field book is to form its title page, showing the State or Territory where such survey lies, by whom surveyed, and the dates of commencement and completion of the work. The second page is to contain the names and duties of assistants. Whenever a new assistant is employed, or the duties of any one of them are changed, such facts, with the reasons therefor, (sic) are to be stated in an appropriate entry immediately preceding the notes taken under such changed arrangements. With the notes of the *exterior* lines of townships, the deputy is to submit a plat of the lines run, on a scale of two inches to the mile, on which are to be noted all the objects of topography on line necessary to illustrate the notes, viz: the distances on line at the crossings of streams, so far as such can be noted on the paper, and the direction of each by an arrow-head pointing down stream; also the intersection of line by prairies, marshes, swamps, ravines, ponds, lakes, hills, mountains, and all other matters indicated by the notes, to the fullest extent practicable.

With the instructions for making subdivisional surveys of townships into sections, the deputy will be

furnished by the Surveyor General with a diagram of the *exterior* lines of the townships to be subdivided, (on the above named scale,) upon which are carefully to be laid down the measurements of each of the section lines on such boundaries whereon he is to close, the magnetic variation of each mile, and the particular description of each corner. P. in M. signifies post in mound. And on such diagram the deputy who subdivides will make appropriate sketches of the various objects of topography as they occur on his lines, so as to exhibit not only the points on line at which the same occur, but also the direction and position of each between the lines, or within each section, so that every object of topography may be properly completed or connected in the showing.

These notes must be distinctly written out, in language precise and clear, and their figures, letters, words, and meaning are always to be unmistakable. No leaf is to be cut or mutilated, and none to be taken out, whereby suspicion might be created that the missing leaf contained matter which the deputy believed it to be his interest to conceal.<sup>17</sup>

### **Historical Collections Containing Field Notes**

The public land survey field notes can be found in two collections housed in the Minnesota History Center managed by the Minnesota Historical Society. The first collection, the original notes made by the deputy surveyors, is catalogued as part of the records of the Secretary of State.<sup>18</sup> The second collection comprises transcribed copies of the original notes and is catalogued as part of the records of the “United States. Office of Surveyor General of Minnesota.”

The volumes of the original field notebooks in the Secretary of State’s collection are stored in 51 boxes. The boxes contain the notes of three types of work; those made by the deputies who established the correction lines, standard parallels, and guide meridians, those made by the deputies who established other township exteriors that did not provide a correction function, and those made by the deputies who subdivided the townships. The field notes for all township exteriors are contained in 632 volumes, and the notes for subdivisions in 758 volumes. Included in the collection are volumes containing the notes for the surveys of islands (1853-1907), Indian reservations, Fort Ripley Military Reservation (1855-1894), and some roads (1852-1857). All of these volumes were indexed by the Secretary of State’s Office and the notes for each line segment easily found using maps that show the appropriate volume number. An electronic version of the collections inventory, including a detailed description, can be found online at <http://www.mnhs.org/library/findaids/secst025.pdf> This collection also contains a couple of interesting records; Hutton and Snow’s map of the Sioux Reserve made in 1859 and a volume titled “Record of Public Land Surveys in Minnesota,” in which, I believe, the transcribed notes were recorded.<sup>19</sup>

There are two record groups in the collections catalogued under the heading “United States. Office of Surveyor General of Minnesota.” An electronic version of the inventory to these is available at <http://www.mnhs.org/library/findaids/ussg06.pdf>.

33 boxes contain volumes of the transcribed copies of the original field notes in the Secretary of State’s collection. Most of the copied volumes include the surveyor general’s certification of the accuracy of the copied notes. A note from the Minnesota Historical Society staff states,

Some (copies) were made immediately after completion of the survey; others were done much later. Several are identified as copies of copies. They include both bound volumes

containing field notes for several townships, and interfiled folders of unbound notes for single townships. In general, they are arranged by principle meridian, then range, then township; the bound volumes sometimes slightly disrupt this sequence.

This is not a complete set of survey field notes; notes for some townships are missing from volumes.<sup>20</sup>

One box contains 33 field notebooks compiled by survey examiners and several folders arranged chronologically. Included in the box are some field notes noted as “copies of originals obtained from the surveyor general’s office at Dubuque, Iowa.”<sup>21</sup>

### **Field Notebook Copies (Figure 3)**

The collections described above include (a) the field notes made by the deputy surveyors, comprising volumes of exterior notes and volumes of subdivision notes, and (b) copies of those notes made by clerks in the surveyor general’s office, comprising volumes that include all surveying information for a particular township – both the notes of the exteriors and the notes of the subdivisions. Just why these copies exist in the collections of the Minnesota Historical Society is not known. In 1833 Elijah Hayward, Commissioner of the General Land Office, recommended that each surveyor general make copies of all field notes and send them to Washington for safekeeping.<sup>22</sup> In 1834 and ensuing years Congress appropriated funds to pay for clerks to copy the field notebooks. A list of the copies of field notes that are currently housed at the National Archives, presumably those copies that were sent to Washington, are listed on the National Archives web site.<sup>23</sup>

Although the notes for Minnesota are not listed on the web site, and thus their current location is unknown, the Minnesota notebooks were probably sent to Washington. In the University of Minnesota Library is a microfilm produced by the Bureau of Land Management in 1957, a microfilm that appears to have been made from the transcribed copies of the notes sent to Washington.<sup>24</sup>

On March 3, 1870 the Minnesota Legislature approved the following legislation.

That all surveys made after the passage of this act by county surveyors or other surveyors shall be made in strict conformity to the original United States government surveys, and to enable surveyors to conform to the requirements of this act, the county commissioners of each county are hereby required to procure and keep on file in the office of register of deeds certified copies of the original plats and field notes of the United States government surveys in their respective counties.<sup>25</sup>

As a result of this legislation it appears that clerks in the Surveyor General’s office transcribed the field notes making one notebook from the information contained in at least two and possibly three or four notebooks. All counties in Minnesota should contain certified copies of the township plats and the deputies’ field notes.

**Deputy Field Notebook(s) Exterior****Surveyor General's Transcription****Commissioner, General  
Land Office****Deputy Field Notebook Subdivisions****Secretary of State Collection****U.S. Office of Surveyor General  
of Minnesota Collection****National Archives Collection****University of Minnesota  
Microfilm Collection**

Figure 3. The Relationships between the Minnesota Field Notes Described Here

**Digital Images of the Field Notes**

The Bureau of Land Management has placed digital images of the field notes and the plats on a web site at <http://www.glorerecords.blm.gov/Visitors/OverviewSurveysPlatsAndFieldNotes.asp>. The field notes consist primarily of high-resolution images scanned from the transcribed field note pages. The volumes containing the notes are bound collections of the notes for a particular township derived from several surveys. Plats from Minnesota plats are available, and I presume that they are images of the copies sent by the surveyor general to Washington – the so-called Commissioner's plat, but not the field notes. On the web site, however, is a pull down list of all deputies who worked in Minnesota

Wisconsin has made digital images of the field notes and the relevant plat accessible on the web at <http://digicoll.library.wisc.edu/SurveyNotes/Search.html>. The records for a particular township can be viewed either by clicking on a map of the state or by entering the numerical identifier of a township and range.

The Florida Department of Environmental Protection has placed land records data online at <http://data.labins.org/2003/>. For each township the following is available; the original plat,<sup>26</sup> the

relevant General Instructions,<sup>27</sup> the special instructions,<sup>28</sup> the field notes, and plats created by the State Land Office.<sup>29</sup>

Recently, the Land Management Information Center, the Minnesota Department of Transportation, the Minnesota Historical Society, and the Minnesota Association of County Surveyors and the Bureau of Land Management's Eastern States Office digitized and indexed four volumes of field notes, approximately 1,600 pages, from townships in Anoka, Chisago, Hennepin, Isanti, Pipestone and Traverse counties.<sup>30</sup>

## Conclusion

The field notebooks are irreplaceable for any kind of historical reconstruction, including remonumentation. Although there are a number of copies of such notes, all should be used with caution. Paradoxically, the transfer of the original notes from the Secretary of State's Office to the Minnesota History Center, has allowed greater access. Given the fragile nature of some of these notebooks, however, the surveying community in Minnesota should quickly move to provide digital images of the notes to preserve the originals.

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<sup>1</sup> How the field notes were handled has been surmised from the legend of the map that accompanied the 1847 annual report of the surveyor general.

<sup>2</sup> An inventory of the descriptive lists can be found in the United States. Office of Surveyor General of Minnesota collections at the Minnesota History Center, online at <http://www.mnhs.org/library/findaids/ussg05.pdf>

<sup>3</sup> The deputy or deputies responsible for the township lines might have already been paid.

<sup>4</sup> The legislation provided, in part,

All the corners marked in the survey, returned by the surveyor-general, shall be established as the proper corners, of the sections, or subdivisions of sections, which they were intended to designate....

The boundary lines, actually run and marked in the surveys returned by the surveyor general ... shall be established as the proper boundary lines of the sections, or subdivisions, for which they were intended. 2 Stat 313

<sup>5</sup> White, C. Albert A History of the Rectangular Survey System (Washington D.C. Government Printing Office, 1982) pp.339-355

<sup>6</sup> Id p.344

<sup>7</sup> Id

<sup>8</sup> Id

<sup>9</sup> Id

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<sup>10</sup> The four township exterior lines were run on consecutive days between Jan 11-16, first the south exterior from east to west, then the west exterior from south to north, followed by the east exterior from south to north, and finally, the north exterior from east to west. I described the method for establishing exteriors in the 1846 instructions in “The first township exteriors in Minnesota” Minnesota Surveyor vol. 15, 4 (Winter 2007-2008) pp.17-20, 23-24, 25-27.

<sup>11</sup> Id pp.385-399. I do not know the relevance of these instructions to the surveys in Minnesota Territory

<sup>12</sup> Id p.392

<sup>13</sup> Id pp.434-456

<sup>14</sup> Id pp.442-444

<sup>15</sup> Id pp.457-500

<sup>16</sup> Act of May 30 1862, 12 Stat 409

<sup>17</sup> Id p.465

<sup>18</sup> This collection was formerly housed in the Secretary of State’s Office.

<sup>19</sup> See supra note 1

<sup>20</sup> <http://www.mnhs.org/library/findaids/ussg06.pdf>. p.3

<sup>21</sup> <http://www.mnhs.org/library/findaids/ussg06.pdf> p.8

<sup>22</sup> In December 1827, the Surveyor General’s office at Florence, Alabama, burned and the plats and field notes of the surveys lost. Fortunately, the Surveyor General had sent copies of some of the field notes to Washington, and, of course, copies of all township plats, so that some of the notes and plats could be reproduced fairly easily. The field notes for most of Alabama were lost, however, and a large proportion of the land had to be resurveyed. White supra note 5 p.83

<sup>23</sup> According to the National Archives web site the Archives possesses the original survey notes for Illinois, Indiana, Iowa, Kansas, Missouri, and Ohio, and original township plats for Alabama, Illinois, Indiana, Iowa, Kansas, Mississippi, Missouri, Oklahoma, Wisconsin, and parts of Ohio. <http://www.archives.gov/publications/general-info-leaflets/67.html#note> I presume that these field notes are, in fact, copies.

<sup>24</sup> Catalogued as Minnesota field notes. United States. Bureau of Land Management. [Washington, D.C. : U.S. Dept. of the Interior 1850-1945?]

<sup>25</sup> Minnesota Laws 1870 chapter. XLIII.

<sup>26</sup> Saved as .tif file and must be saved before viewing

<sup>27</sup> Scanned from White, see supra note 5

<sup>28</sup> Search by date and/or deputy

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<sup>29</sup> See supra note 26

<sup>30</sup> Jay Krefthefer, personal communication.

**The Correspondence Files of the Surveyor General of Wisconsin and Iowa**  
Rod Squires, University of Minnesota

**Introduction**

In May 2006 I was awarded a contract by the Minnesota Department of Transportation to make a preliminary inventory of the public land survey records in which the surveyor general provided explicit instructions to the deputies awarded surveying contracts in Minnesota. My report, "An Inventory of the Public Land Survey Records for Minnesota: the Special Instructions,"<sup>1</sup> described the voluminous correspondence files kept by (a) the Surveyors General of Wisconsin and Iowa, now part of the Iowa State Archives Collection housed in the Iowa State Historical Building in Dubuque, Iowa, (b) the Surveyors General of Minnesota, now part of the Minnesota State Archives housed in the Minnesota History Center in St Paul, and (c) the Commissioners of the General Land Office, now part of the National Archives, Washington D.C.<sup>2</sup>

The correspondence files, of course, are related and so copies of the Letters Received by the Surveyor General of Wisconsin and Iowa from the Commissioner of the General Land Office should be found in the Letters Sent by the Commissioner of the General Land Office. (Figure 1)

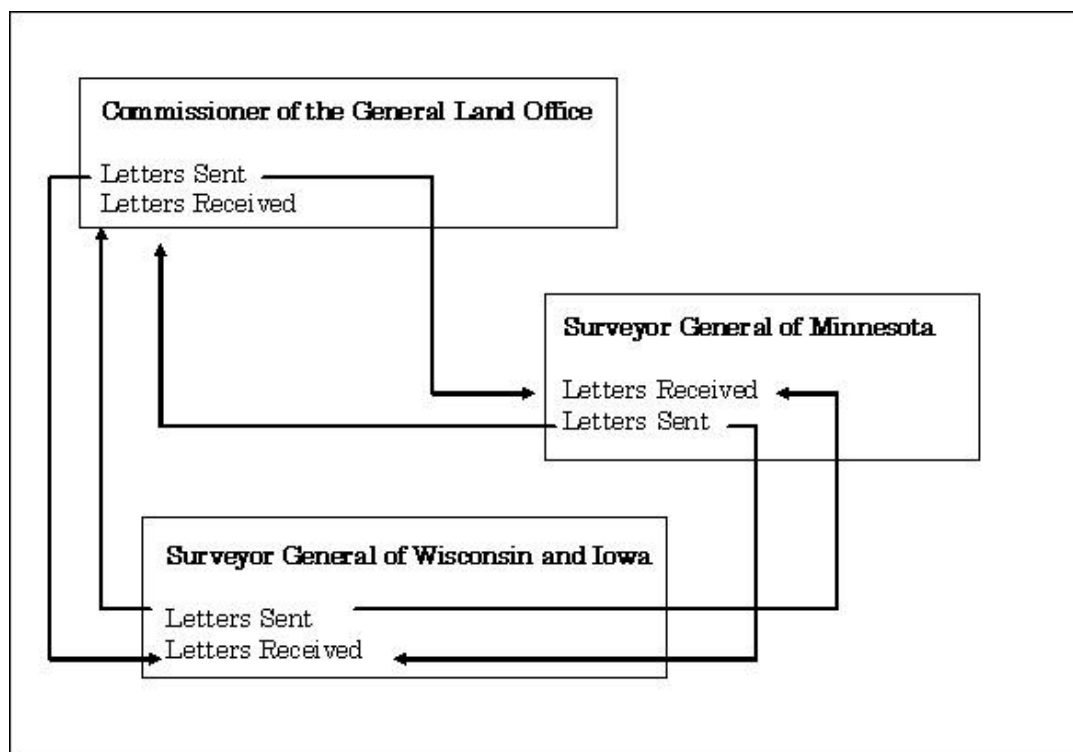


Figure 1. Relationship between the various correspondence files

In my report I recommended future efforts to make such files widely available in an electronic format. Regarding the Letters Received by the Surveyor General of Wisconsin

and Iowa in the Iowa State Archives Collection, stored in boxes, (Figure 2) I noted, “There is no impediment to scanning any of these materials except the need to handle them with care. These letters consist of sheets of paper and can be copied by photocopier and scanner. They can also be photographed with a digital camera. All should be photographed in color.”<sup>3</sup>

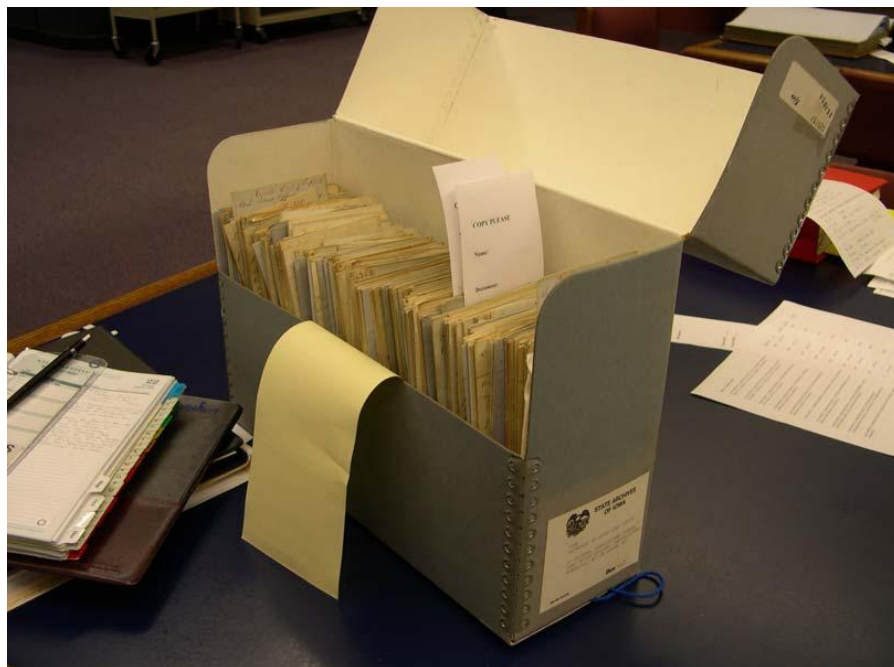


Figure 2. Storage Boxes Containing Letters Received

Regarding the Letters Sent by the Surveyor General, copied in large leather-bound letterbooks, (Figure 3) I noted, “The books were easily photographed with a digital camera .... The few maps will require high resolution. All images should be made in color.”<sup>4</sup>

As a result I made the following recommendation concerning future work on the Iowa State Archives collection,

Digital cameras are allowed in each of the Archives and should be used to provide images of the records. For the most part, there are no impediments to taking photographs. Digital photography is preferred over scanning because of the variety of the records – single page separate, single page bound in a book, multiple pages bound together with tape etc. Digital photography would avoid most questions of the preservation of the records. High quality color images of the letters and letterbooks are easily readable.<sup>5</sup>

### Subsequent Work

In August 2008 John Freemyer and I went to Des Moines to take a second look at the Surveyor General’s correspondence files, currently contained in Record Group 81, Secretary of State Land Records.<sup>6</sup> I subsequently contracted with Robert Mapes. Fallen Leaf Studio, Des Moines, to photograph some of the letters. I now possess 550 digital images of the Letters Received by the Surveyor General and approximately 2000 images of the Letter

Sent by the individuals who occupied that office.

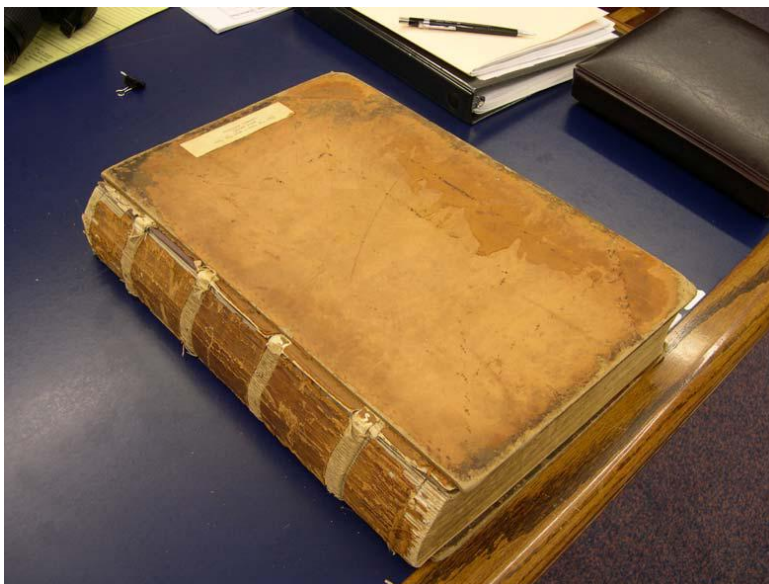


Figure 3. Letterbooks Containing Copies of Letters Sent

The Letters Received, which include letters written over a period of fifty years, are contained in seven boxes. (Figures 2, 4, 5).<sup>7</sup> Two boxes contain letters from the deputy surveyor to the Surveyors General and five boxes contain letters from the Commissioners of the General Land Office to the Surveyors General. The letters photographed were selected by John Freemyer and myself as being the most useful for those interested in the Minnesota surveys. There was no attempt to photograph every letter that might be relevant to Minnesota because the collection in the Archives is not complete.<sup>8</sup>

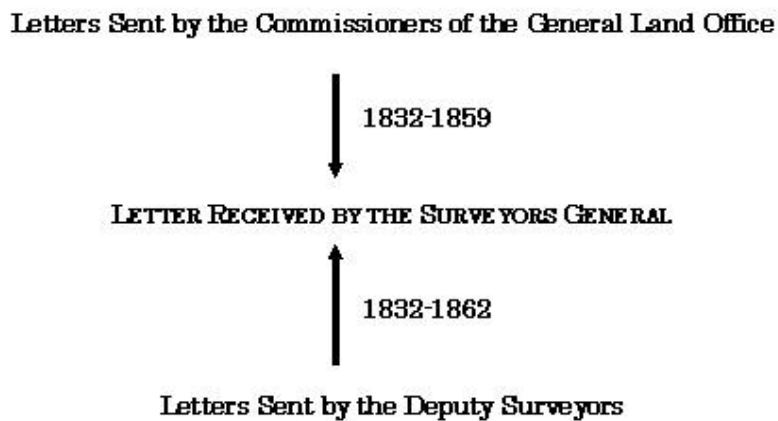


Figure 4. Letters Received by the Surveyor General of Wisconsin and Iowa

## Letters from deputy surveyors

Location 35/049	Box 04	1832-1855	47 images
Location 35/049	Box 05	1853-1880	76 images

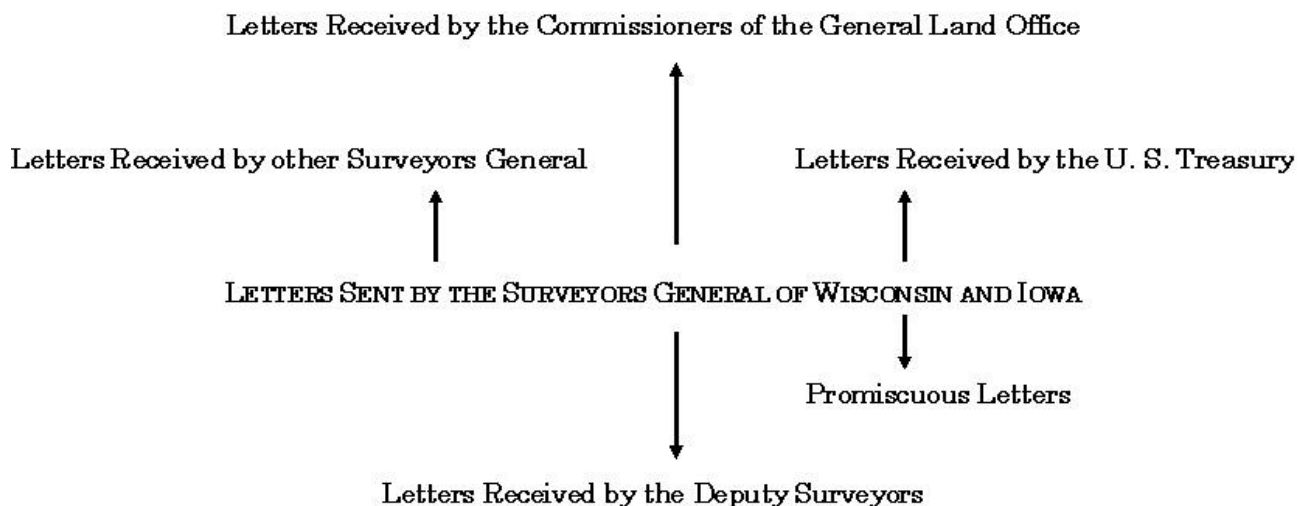
## Letters from Commissioner of the General Land Office

Location 35/056	Box 52	1843-1849	21 images
Location 35/037	Box 53	1839-1872	59 images
Location 35/058	Box 60	1852-1856	71 images
Location 35/058	Box 61	1857-1863	23 images
Location 35/058	Box 63	1850-1853	254 images

Figure 5. Images of Letters Received

Each photograph is identified by its current location in the Archives, the number of the box in which the actual letter can be found, and the date that the letter was written. So, for example image 004-1832-04-16 is the image of a letter written April 16, 1832 which can be found in Box 04.

The Letters Sent, which include copies of letters spanning the period 1846-1864, are contained in five volumes of letterbooks (Figures 3, 6, 7) All letters sent between May 20, 1847 and January 8, 1858 were photographed.<sup>9</sup> Each image is identified by the book number and page number.

Figure 6. Letters Sent by the Surveyor General of Wisconsin and Iowa.<sup>10</sup>

Location 24/012	Volume C (Book 1)	June 4, 1846 – November 2, 1848	106 images
Location 24/012	Volume D (Book 2)	October 18, 1848 – October 16, 1851	679 images
Location 24/012	Volume E (Book 3)	August 13, 1851 – May 9 1853 <sup>11</sup>	640 images
Location 24/012	Volume F (Book 4)	December 5, 1853 – April 25, 1857 <sup>12</sup>	475 images
Location 24/012	Volume G (Book 5)	April 9, 1857 – July 16, 1864	106 images

Figure 7. Images of Letters Sent

### Future Work

The next task, far more consuming than actually photographing the letters, is to provide an index for those images that are most relevant to the surveys in Minnesota Territory. This task will take a few years as I describe the story of those surveys, a story that will necessarily involve me transcribing some of the letters.

The index and the images will be made available eventually.<sup>13</sup> The index will obviously use the numerical identifier of the photograph, the location of the letter in the Iowa State Archives, the subject matter, and either the sender or the recipient. In addition, I hope that hypertext links will allow anyone to jump from the index to the image of the letter and to the relevant field notes and plat.<sup>14</sup>

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<sup>1</sup> Online at <http://www.cts.umn.edu/Research/ProjectDetail.html?id=2007001>

<sup>2</sup> I described the Iowa State Archives collections in a previous article “A Preliminary Inventory of Documents Relating to the Public Land Surveys of Minnesota Territory, located at the Historical Building, Des Moines, Iowa 50319” *Dis-Closures* Fall 1993 p.19.

Greg Kinney and Lydia Lucas described the collections in the Minnesota State Archives in “A Guide to the Records of Minnesota’s public Lands“ (Minnesota Historical Society, Divisions of Archives and Manuscripts. 1980) online at [http://www.lmic.state.mn.us/pdf/MN\\_public\\_lands\\_records.pdf](http://www.lmic.state.mn.us/pdf/MN_public_lands_records.pdf)

Some of the collections in the National Archives collections have been microfilmed, for example M27 “Letters Sent by the General Land Office to Surveyors General, 1796-1901”; M477 “Letters Sent by the Surveyor General of the Territory Northwest of the River Ohio, 1797-1854”; M478 “Letters received by the Secretary of the Treasury and the Commissioner of the General Land Office from the Surveyor General of the Territory Northwest of the River Ohio, 1797-1849”; and M479 “Letters Received by the Surveyor General of the Territory Northwest of the River Ohio, 1797-1856”

<sup>3</sup> p.21

<sup>4</sup> p.25

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<sup>5</sup> p.50

<sup>6</sup> The current arrangement and locations need to recall the materials from storage is shown.

<sup>7</sup> The letters are not filed in chronological order. Clearly, in some instances, they have been rearranged.

<sup>8</sup> I have seen some letters in private hands.

<sup>9</sup> Obviously not all of the letters will be relevant to the surveys in Minnesota

<sup>10</sup> Figure 6 shows, in diagrammatic form, the recipients of the letters contained in Vol D Book 2 as indicated by an index of unknown provenance, found in the volume

<sup>11</sup> Note the overlap in dates

<sup>12</sup> Note the gap between May 9 and December 5, 1853

<sup>13</sup> Should anyone want images of a particular letter I'd be glad to provide a copy.

<sup>14</sup> See Jay Krafthefer, "The day will come" Minnesota Surveyor vol.13 no.3 (Autumn, 2006) pp.20-21

# The Public Land Survey Lines and the St. Croix River in Washington County

Rod Squires, University of Minnesota, and Marc Senjem, Washington County

## Introduction

On May 29, 1848 Wisconsin became a state and the St. Croix River its western boundary.<sup>1</sup> Excluded from the new jurisdiction was the area between the St. Croix and Mississippi rivers, an area that had previously been part of Wisconsin Territory. Most importantly, the excluded area had already been surveyed by deputies awarded contracts by George W. Jones, the Surveyor General of Wisconsin and Iowa, who, quite naturally, had treated the St. Croix as just another water obstacle.<sup>2</sup> (Figure 1) The field notes of the deputies and the township plats, based on the information the notes contained, had been certified by the Surveyor General. The following

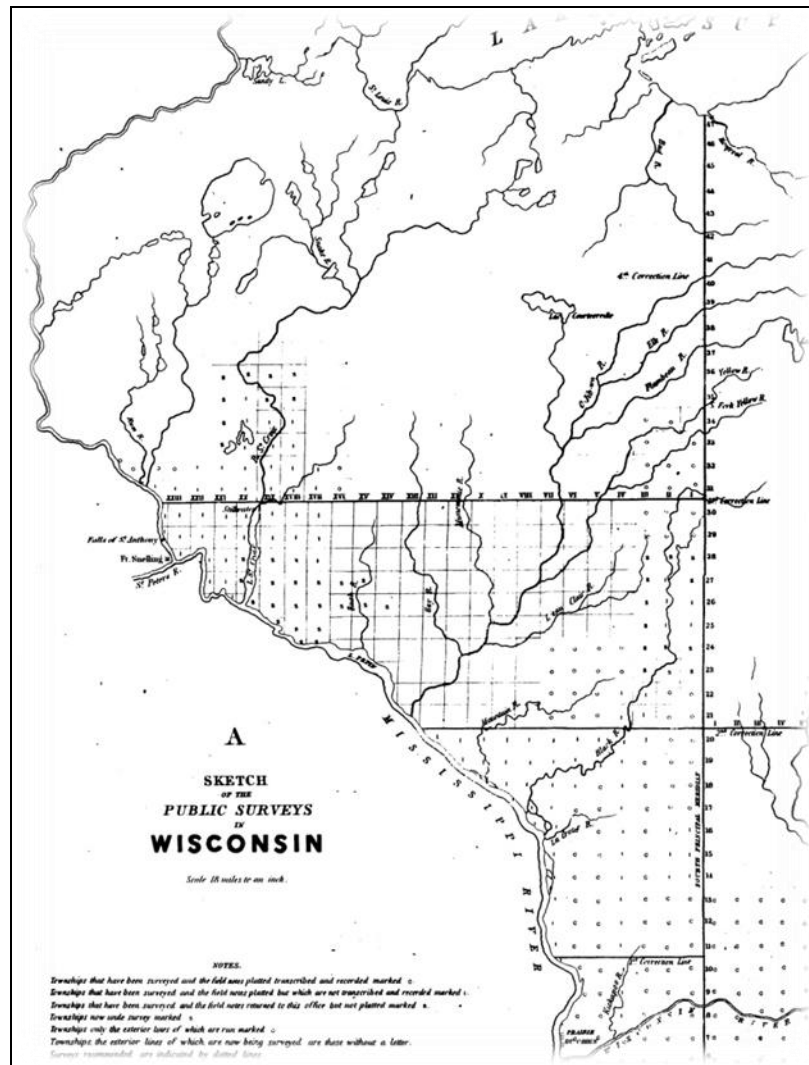


Figure 1. Map of Surveys at the end of 1848.<sup>3</sup>

year, on March 3, 1849, Congress created a new jurisdiction, Minnesota Territory, that included the surveyed area between the St. Croix and Mississippi rivers. As a result the certified field notes and township plats would need to be revised as Justin Butterfield, the Commissioner of the General Land Office, explained to Caleb Booth, who replaced George W. Jones as Surveyor General of Wisconsin and Iowa in January 1849,

By the 1st Section of the Act of 12th June 1840 entitled “an act for the discontinuance of the office of the Surveyor General in the several districts” etc. it is provided that “whenever the surveys and records of any such district or State shall be completed, the Surveyor General thereof shall be required to deliver over to the Secretary of State of the respective States, including such surveys, or such other officer as may be authorized to receive them all the field notes, maps, records and other papers appertaining to the land titles within the same.”

In view of the provisions of law, it is requested that you will cause the field notes of the surveys in Wisconsin to be kept separate and distinct from those of the surveys in Minnesota and the same course should also be pursued with reference to the lands in Iowa, and Minnesota after the Northern boundary of Iowa shall have been established. Separate plats of the surveys will also be required.<sup>4</sup>

Booth replied,

During the years 1847 & 8 & before the question of boundary between Wisconsin and Minnesota was definitely decided, the surveys in the vicinity of the boundary were pushed rapidly forward – the subdivision being extended from the Mississippi river very nearly to the point where a line drawn due south from the Rapids of the St. Louis river will intersect the St. Croix river. The field notes & plats of these surveys, consequently, embrace the lands upon either side of the boundary in all instances where a township is traversed by the St. Croix.

I have already found it necessary to construct new plats and descriptive lists of thirteen fractional townships, lying East of the St. Croix and which are divided by that stream, for the use of the Register at the mouth of the Willow river in Wisconsin all of which had once been prepared and forwarded to the Register formerly at the falls of St. Croix but now at Stillwater in the Terr’y of Minnesota.

As there exists no immediate necessity for the separation of the original field notes and plats of these surveys, I presume it will be proper for me to direct a portion of the force of my office to that object, during the intervals of pressing, current duties.<sup>5</sup>

He subsequently noted in his annual report for 1850 that described the surveying activities in his surveying district for the fiscal year July 1, 1849 to June 30, 1850,

During the quarter closing on the 30<sup>th</sup> ultimo, I directed a part of the regular force of my office to the separation of the field-notes and plats above named. The field-notes of three large districts of township lines, the subdivision and traverse of thirteen

townships, and the original plats of the same thirteen townships, had to be, and now have been, copied, examined and certified.<sup>6</sup>

Here we describe how Surveyor General Booth duplicated the field notes made by Henry Wiltse and James Marsh, who ran the exteriors of seven townships in Washington County that went across the St. Croix River.<sup>7</sup> (Figure 2) We are not concerned with the details of the actual surveys but the records of the surveys that exist and are available to be used by modern land surveyors. Our purpose is to alert surveyor working in these townships, and in other areas where the public land surveys preceded the establishment of a territorial or state boundary, about the nature of such survey records.

Initially we supposed that the field notes in the Wisconsin Board of Commissioners of Public Lands collections would be the certified original notes describing how deputies carried out the surveys before Minnesota became a territory, when both sides of the St. Croix were part of Wisconsin Territory.<sup>8</sup> The notes in the Minnesota Secretary of State collections on the other hand, we supposed, would be certified copies of the original notes describing the work of the deputies only on the west side of the River, in Minnesota Territory.<sup>9</sup> What we found, however, was more complex. The question we are seeking to answer, then, is the relationship between the field notes and township plats in the Wisconsin and Minnesota collections.

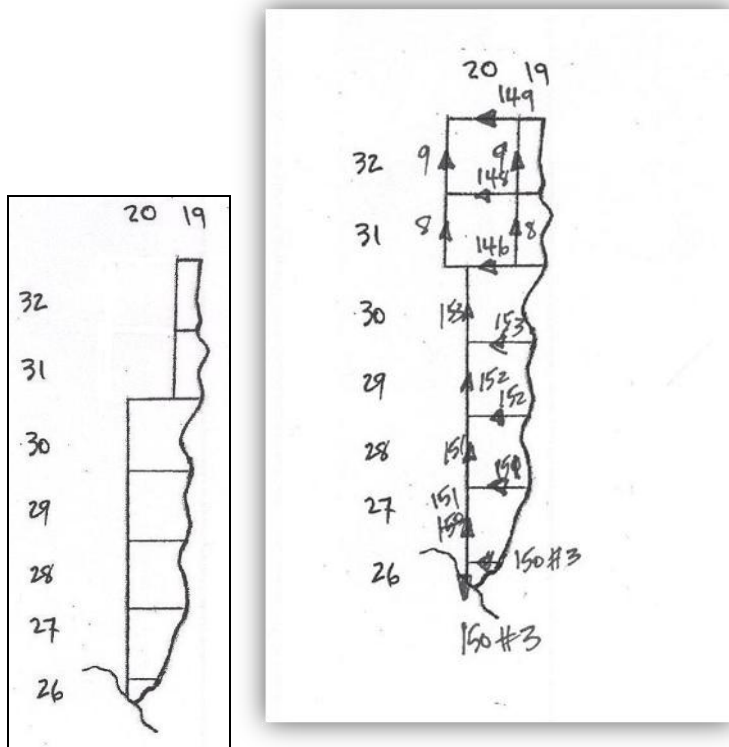


Figure 2. Townships Described Here

## The Rectangular Surveys

On May 22, 1847 the Surveyor General of Iowa and Wisconsin, George W. Jones, awarded a contract to Henry A. Wiltse to run the 3<sup>rd</sup> Correction Line from the 4<sup>th</sup> Principal Meridian to a line that would separate T31N R20W and T32N R21W, just west of the St. Croix, and a contract to James M. Marsh to establish townships both north and south of the Correction Line on both sides of the St. Croix.<sup>10</sup> All of the surveys were run under the instructions that Surveyor General Jones had issued on May 28, 1846.<sup>11</sup>

Deputy	Minnesota Collections	Area Covered	Wisconsin Collections	Area Covered
James Marsh	Vol.130-133	W of River	Vol.149-153	E and W of River
Henry Wiltse	Vol.132	From R20/R21 to Mississippi (see below)	Vol. 146	From 4 <sup>th</sup> Principal Meridian to R20/R21

Figure 3. Deputies running Township Exteriors described here.<sup>12</sup>

## The Township Exterior Field Notebooks - Wisconsin

Henry Wiltse ran the 3<sup>rd</sup> Correction Line, the line between T30 and T31, in July and August 1847. The title page of volume 146 of the Wisconsin field notes carries the word “compared.”<sup>13</sup> These notes begin at the 4<sup>th</sup> Principal Meridian, some 100 miles east of the St. Croix, and end at the township corner between R20 and R21 west of the River. He chained across the St. Croix River in T19, setting meander posts on both banks and in his affidavit stated that he had “regularly surveyed that portion of the Third Correction Parallel which commences in the Fourth Prin. Mer. W.T. and extends West to the line dividing Ranges 20 & 21.” The notes were certified by George W Jones on August 20, 1847.

The exteriors run by James Marsh crossing the St. Croix are found in six volumes, 148-153, in the Wisconsin collections. Interestingly, although of unknown relevance, none of his notes were certified by George W Jones, rather the requisite affidavit in each volume was witnessed by J. B. Covey, Judge of Probate at Stillwater, St. Croix County on October 30, 1847.<sup>14</sup> In the affidavit Marsh stated that he had carried out the surveys described in the notes in Wisconsin Territory. Volumes 149, 150, 151, 152, and 153 contain the words “duplicate” and “compared” on their cover or title page, volume 148 does not, however.

The exteriors north of the 3<sup>rd</sup> Correction Line can be found in volumes 148 and 149. In volume 148 Marsh described running the western exterior of T31N R19W northwards from line between T30N and T31N, the 3<sup>rd</sup> Correction Line, on August 1, 1847.<sup>15</sup> He then established the northern exterior as he ran westwards on August 19, chaining over the St. Croix, setting a meander post on each bank, and then continuing westwards until he reached the Mississippi on August 24. In volume 149 he described running the western exterior of T32N R19W northwards from the line between T31N and T32N on August 27. Chaining westwards he established the northern

exterior of the township on September 3, setting a meander post on the east bank of the St. Croix, chaining over the river, 22.68 chains wide at that point, noting “Quarter post in River”, and continuing westwards, reached the Mississippi on September 8.

The exteriors south of the 3<sup>rd</sup> Correction Line can be found in volumes 150-153. In volume 150 No.3 he described establishing the northern exterior of T26N R20W as he chains westwards on September 22.<sup>16</sup> Arriving at the east bank of Lake St. Croix he noted “Section corner in lake” and then “Over lake & set meander post” continuing to the NW corner of the township after which he ran the western exterior of the township south to the Mississippi. In volume 151 he described running the western exterior of T27N R20W northwards on September 23 and running the north exterior westwards on September 28-29. He reached the east bank of St. Croix Lake where he set a meander post, noting “Quarter Section post in Lake.” He set a meander post on the west bank of the lake, at that point 31.62 chains wide, and continued to the Mississippi which he reached on September 30. He then ran the western exterior of T28N R20W September 30 – October 1. In volume 152 he described running the northern exterior of T28N R20W running westwards on October 5, reaching the Mississippi on October 7, and then running the west boundary of the township going north on October 9. Finally, in volume 153, he described running the northern exterior of T29N R20W westwards on October 14, chaining to Lake St. Croix where he recorded both a quarter section and a section corner in the lake. He set a meander corner on the west bank and continued westwards, reaching the Mississippi three days later. He ran the township’s western exterior two days later on October 19-20.

### **The Township Exterior Field Notebooks - Minnesota**

The field notes in volume 132 of the Minnesota collections describes the surveys Wiltse ran only on the west side of the St. Croix, from T20/21N to the Mississippi River. In his affidavit he stated they were “the true and original field notes of the said survey” of his survey in Minnesota Territory, which, of course did not exist when he ran his line. Like the notes for the east side of the River, his notes were certified by George W. Jones on August 20, 1847. They were also certified three years later, by Caleb Booth, on July 12, 1850. We might suppose that these notes were copies of the originals made by Wiltse, however, the volume containing the notes is considerably thinner than other volumes and the notes are on separate pages rather than in a bound form. They have all the appearance of having been removed from an earlier book of field notes, which we suppose might have contained Wiltse’s work both east and west of the River. Wiltse’s affidavit in volume 132 must have been rewritten.<sup>17</sup>

The notes to Marsh’s surveys in volumes 130, 131, and 133 of the Minnesota collection, describe only those lines he ran west of the River from east to west.<sup>18</sup> His notes contain no evidence of any lines east of the River. The notes were certified by Caleb Booth on May 14, 1850 as “a true copy of a part of so much of the original field books containing the surveys executed by James M. Marsh, Dep. Sur., under his contract of May 22d 1847 and contains the surveys of that part of his District situated West of St. Croix Lake in the territory of Minnesota.” Clearly, these notes are all copies of the originals.

Location	Deputy	Minnesota Collections	Wisconsin Collections	When Surveyed
T26N R20W	William A Jones	135 W only	135W01 E only	Oct.15- Nov. 24, 1847
T27N R20W	William A Jones	135 E and W	135W02 E only	Nov. 2-22, 1847
T28N R20W	William A Jones	135 E and W	135W03 E only	Nov 11-18, 1847
T29N R20W	John Dunn	135 E and W	135W04 E only	Nov. 1-6, 1847
T30N R20W	John Dunn	135 E and W	135W05 E only	Nov. 6-10, 1847
T31N R19W	Henry Maddin	119 W only	132W03 E and W	Dec.30 –Jan. 11
T32N R19W	Henry Maddin	119 W only	132W04 E and W	Dec. 26-29, 1847

Figure 4. Field Notebooks of Township Subdivisions Crossing the St. Croix River

### The Township Subdivision Field Notebooks - Wisconsin

We expected that the field notes of deputies subdividing the townships in the Wisconsin collections would describe their work in each township. This was not the case.

William A Jones was awarded a contract on July 18, 1848 several months after Minnesota Territory had been established. In all three townships he closed his lines against the east bank of Lake St Croix, usually by true lines run west, setting a meander corner on the east bank. His subdivision of T26N 20W took him in a little over a month. In his affidavit Jones stated that he had performed the surveys in Wisconsin, and the affidavit witnessed by Francis Yager, Justice of the Peace, Dubuque County, Iowa on December 20, 1848.<sup>19</sup> Although the notes for this township are not labeled “copy” they only show a fractional township and he received a contract to subdivide the entire township. Despite this, we presume that these notes are originals.<sup>20</sup> The notes for the other two township Jones subdivided, T27N R20W, a “Fractional” township in “Wisconsin,” and T28N R20W are both labeled “copy.” They describe the lines the deputy ran east of Lake St. Croix, lines that he closed against the Lake with true lines run westwards, setting meander corners on the east bank. His affidavit in both volumes of notes were witnessed by Francis Yager on December 20, 1848. However, the notes to T27N R20W were also certified “as a true copy of that part of the original field book of the survey... as lies East of St. Croix river in the State of Wisconsin” by Caleb Booth, the Surveyor General on December 20, 1850. The notes to T28N R20W were certified by Booth “as a true copy of the original notes of the subdivision of township 28 North, Range 20 West, 4<sup>th</sup> Meridian, as far as the same extends into Wisconsin,” on August 5, 1850.<sup>21</sup>

John Dunn subdivided two townships. His notes of T29N R20W are labeled “copy” of “Subdivision of Fract Township 29 North Range 20 West of the 4<sup>th</sup> Principal Meridian Wisconsin.” Dunn only described the lines he ran east of the St. Croix, all of which close against the River. The notes were certified November 26, 1847 by George W Jones, and certified again, as a true copy of the lines that were made in Wisconsin, by Booth on August 23, 1850. Similarly, Dunn’s notes of the survey in which he subdivided T30N R20W only shows the lines east of the River that close against the River. The certificates attached to these notes are similar to those attached to the other township subdivided by Dunn.

On August 30<sup>th</sup> 1847 the Surveyor General issued the following special instructions to Dunn,

Herewith you will receive five blank diagrams upon which you are required to note the topography variation of the compass upon each mile & the length of the exterior lines of each township of your district, as also the length of the exterior lines of closing on lake St Croix or St. Croix river which you are hereby required to meander on both banks, as far as they extend in you district. You will obtain these notes together with the description of all section corners on your exterior lines from James M. Marsh, Dep. Sur. Who you will find within or near your district.

In establishing all East & West lines intersecting Lake St. Croix where the width is too great to connect the surveys on each sided. You will run them as true lines observing to place your quarter section corners forty chains from the point of beginning and your meander corner at the first point of intersection with the Lake if within one mile and regulating your variation by that of the E & W line immediately south of the one to be run.

Should these lines exceed one mile, you will place a Section corner at 80 chs & from thence continue your E & W line to the Lake: and afterwards run the necessary N & S lines from the section corner last made.

You are hereby required to make the returns of the field notes of said survey in person.<sup>22</sup>

In contrast, the notes describing Henry Maddin's subdivision of T31N R19W contains notes for the entire township including land on the east and west side of the St. Croix. In the notes Maddin described chaining over the St. Croix setting meander posts on both banks where his lines intersected the River. On the west tier of sections he ran a random line eastwards from the township line to the meander post and a true line westwards. George W Jones certified the notes on March 7, 1848. These must be originals or transcriptions of the originals.

The notes describing Henry Maddin's subdivision of T32N R20W are discussed below.

### **The Township Subdivision Field Notebooks - Minnesota**

Jones' subdivision field notes for T26N R20 include only the surveys he made west of Lake St. Croix in Minnesota Territory. His affidavit was witnessed by Francis Yager, Justice of the Peace, Dubuque County, Iowa on December 20, 1848 and certified as true copies by Caleb Booth August 2, 1850.<sup>23</sup> The notes of his surveys of both T27N R20W and T28N R20W, however, describe the entire townships in Wisconsin Territory. The affidavits in both volumes are witnessed by Francis Yager.

John Dunn's notes describing the subdivision of T29N R20W and T30N R20W contain notes on the entire township in Wisconsin Territory, both of which were certified by Jones November 27, 1847. These must be originals or transcriptions of the originals.

In contrast, the notes describing Henry Maddin’s surveys of T31N R19W and T32NR19W only describe that portion of the township lying west of the St. Croix in Minnesota Territory. Both volumes were certified by Jones March 7, 1848 and each was certified as a true copy of the notes “as lies west of the St. Croix River in the Territory of Minnesota” by Caleb Booth August 21, 1850.

Dunn instruction

### The Township Plats

We supposed the plats in the Wisconsin collections would show both sides of the River and the Minnesota collections would show only the west side of the River. This was not the case but it is relatively easy to see what did happen, whichever jurisdiction contained the largest proportion of the township received the original map and the other jurisdiction received a certified copy. (Figure 5,6)

<b>Township</b>	<b>Surveyor General</b>	<b>Date Certified</b>	<b>Comments</b>
T26N R20 W	George W Jones	Dec 20 1849	Entire township shown. W of St. Croix marked "Copied"
T27N R20W	George W Jones	Dec 20 1849	Only E of St. Croix shown. Marked "Copy" and certified by Booth Aug 6, 1850
T28N R20W	George W Jones	Dec 20 1849	Only E of St. Croix shown. Marked "Copy" and certified by Booth Aug 6, 1850
T29N R20W	George W Jones	Jan 14 1848	Only E of St. Croix shown. Marked "Copy" and certified by Booth Aug 6, 1850
T30N R20W	George W Jones	Jan 14 1848	Only E of St. Croix shown. Marked "Copy" and certified by Booth Aug 6, 1850
T31N R19W	George W Jones	April 18 1848	Entire township shown. W of St. Croix marked "copied"
T32N R20W	George W Jones	April 18 1848	Entire township shown. W. of St Croix marked "copied"

Figure 5. Plats in Wisconsin Collections

<b>Township</b>	<b>Surveyor General</b>	<b>Date Certified</b>	<b>Comments</b>
T26N R20 W	George W Jones	Dec 20 1849	Only W of river shown. Marked “Copy” and certified by Booth Aug 6, 1850
T27N R20W	George W Jones	Dec 20 1849	Entire township shown. E of river marked "copied"
T28N R20W	George W Jones	Dec 20 1849	Entire township shown. E of river

			marked "copied"
T29N R20W	George W Jones	Jan 14 1848	Entire township shown. E of river marked "copied"
T30N R20W	George W Jones	Jan 14 1848	Entire township shown. E of river marked "copied"
T31N R19W	George W Jones	April 18 1848	Only W of river shown. Marked "Copy" and certified by Booth Aug 6, 1850
T32N R19W	George W Jones	April 18 1848	Only W of river shown. Marked "Copy" and certified by Booth Aug 6, 1850

Figure 6. Plats in the Minnesota Collection

### Township 32N Range 19W of the 4<sup>th</sup> Principal Meridian

The township exteriors were run by James M. Marsh under a contract dated May 22, 1847. In volume 148 of the Wisconsin collection field notes he describes running the line between T32N and T31N from R16/17W to the Mississippi River in R25W from August 16-24, 1847, running the south exterior line of T32N R19W on August 19. In volume 149 he describes running both the eastern exterior, lying west of St. Croix, and the western exterior, lying east of the St. Croix, from that southern exterior on August 27. He then describes running the line between T32N and T33N from R16/17W to the Mississippi in R26W, from Aug 31 – Sept 8, 1847, running the north exterior line of T32N R19W on Sept. 3. In Volume 130 in the Minnesota collections only Marsh's surveys west of the St. Croix are described.

The township was subdivided by Henry Maddin. In volume 132 of the Wisconsin collection Maddin describes subdividing the entire township, the bulk of which lay on the east side of the St. Croix River. The sequence in which he ran his lines and established corners is shown in Figure 8. In the notes Maddin describes intersecting the St. Croix running north between sections 31 and 32. He sets a meander post but both the ¼ section and section corners are in the river. He also intersects the river on his line between sections 29 and 32, setting a meander post on the left bank, and on his line between 30 and 31, setting a meander post on the right bank. The section corner common to sections 29, 30, 31, and 32 lies in the river. He sets meander posts on both banks where his lines intersected the St. Croix between 19 and 30, 18 and 19, 8 and 17, 7 and 18, 6 and 7, and 5 and 6. As previously, he runs a random line east and a true line west on the west tier of sections in the township. George W Jones certified the notes on March 7, 1848.

He describes chaining across the St. Croix River with meander corners set on both banks. Importantly, he runs a random line westwards and a corrected line eastwards between sections 30/31, 19/30, 18/19, 7/18, 6/7. In volume 119 of the Minnesota collection only those section lines lying west of the St. Croix River are described and so Maddin describes running his subdivision lines from the western exterior of the township on a true line east to the St. Croix, terminating at a meander corner on the right bank of the St. Croix River. This he did not do rather he ran a corrected line east.

One township plat, certified by Surveyor General George W. Jones on April 18, 1848, shows the entire township lying on either side of the St. Croix River and the area west of the St. Croix is marked in red ink “Copied.”<sup>24</sup> A second plat, obviously a copy of the earlier plat because it shows only that part of the township lying west of the River in the Territory of Minnesota is also certified by Surveyor General George W. Jones, April 8, 1848. (Figure 7, 9A) This plat contains an additional certification, from Surveyor Caleb Booth on August 5, 1850 “as a correct copy of so

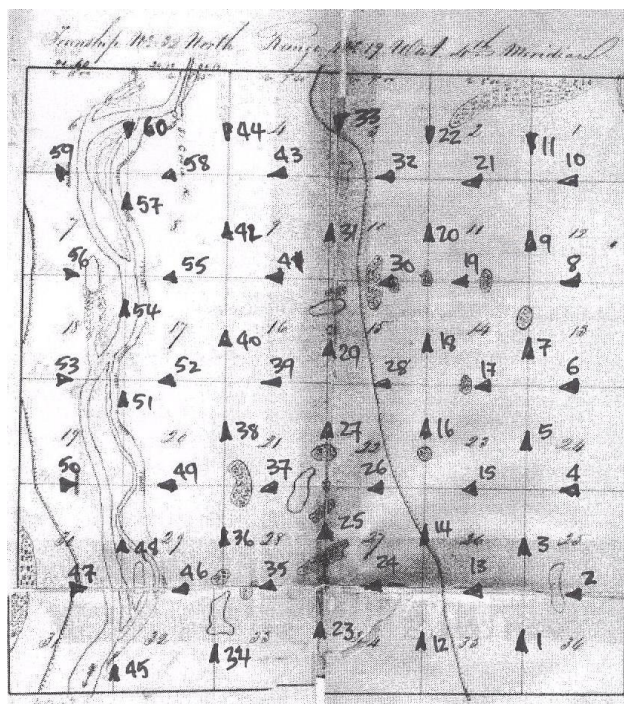


Figure 7. Sketch in Maddin’s Field Notes.<sup>25</sup>

much of the original plat of Township No.30 N. of Range No.19 W of the Fourth Principal Meridian as lies West of the St. Croix river in the Territory of Minnesota.” (Figure 9B)<sup>26</sup>

## Conclusion

There appears to be no consistency how Booth separated the field notes of Wisconsin and Minnesota and therefore which jurisdiction got the originals notes and which got copies. Perhaps there was a method behind his actions and some of the notes have been lost in the following 150 years! On the other hand, Booth seems to have handled separating the township plats in a purely pragmatic fashion. The jurisdiction in which the major portion of the township lay got the official plat.

Surveyors should be careful how they use the notebooks of the deputies establishing and

subdividing townships lie partly in Wisconsin and partly in Minnesota that were established and subdivided before the St. Croix became a boundary.

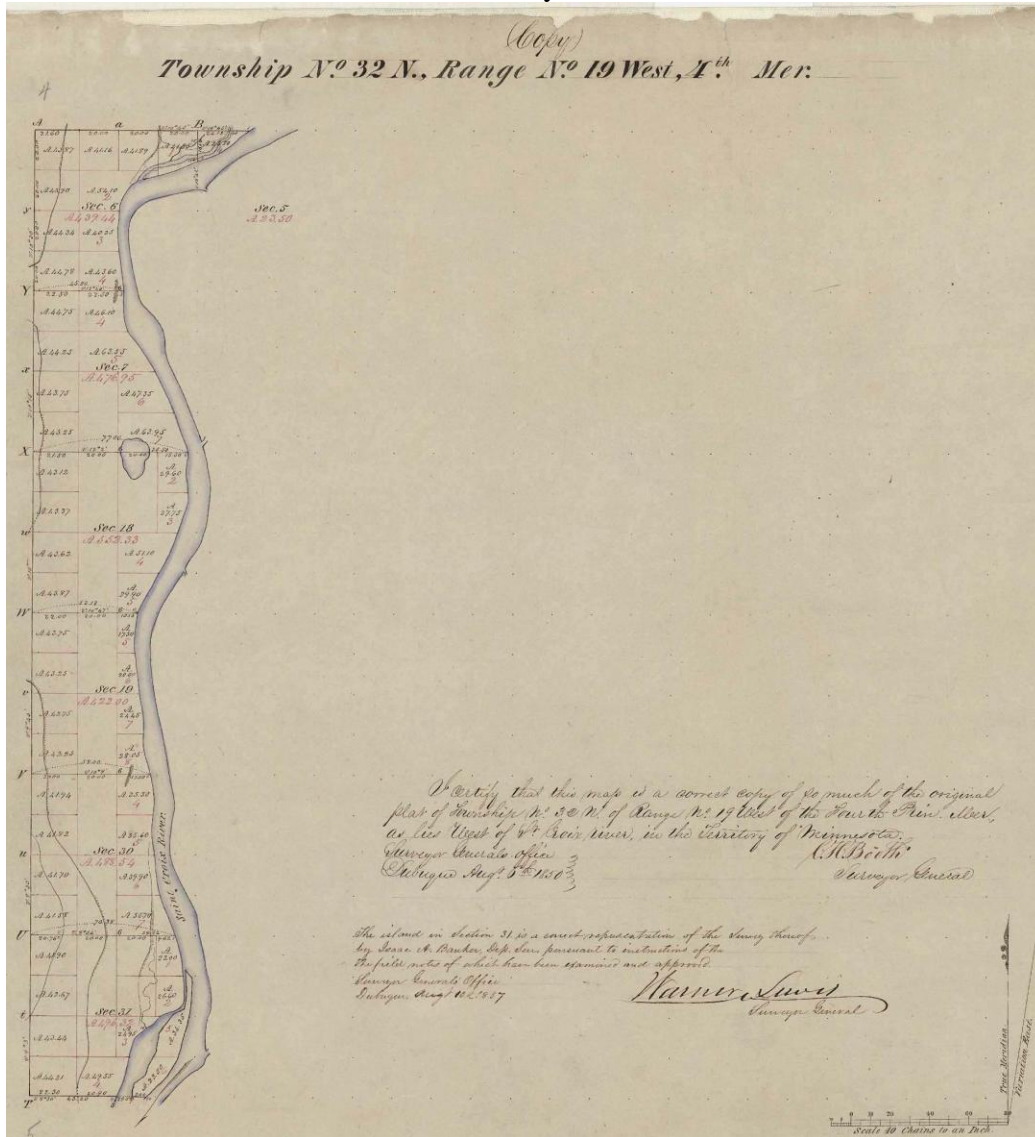


Figure 9A. Township 32 North Range 20 West 4<sup>th</sup> PM Minnesota collections

I certify that this map is a correct copy of so much of the original plat of Township No. 32 N. of Range No. 19 West of the Fourth Prin. Mer., as lies West of St. Croix river, in the Territory of Minnesota,  
Surveyor General's Office,  
Dubuque Aug. 5<sup>th</sup> 1850,  
C.H. Booth,  
Surveyor General

Figure 9B. Surveyor General Caleb Booth's certification of the copy

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<sup>1</sup> The St. Croix had been defined as the western boundary of Wisconsin in the Enabling Act a number of years before, on August 6, 1846 9 Stat. 56.

<sup>2</sup>See Squires, Rod "The public land survey in Minnesota Territory, 1847-1852" Dis-Closures (Winter, 1993) pp. 10-17; Squires, Rod "The first township exteriors in Minnesota" Minnesota Surveyor (Winter 2007-2008) pp. 17-20, 22-23, 25-27; Squires, Rod "Geography of township exteriors in Minnesota Territory, 1847-1852." Minnesota Surveyor (Spring 2008) pp. 8-10, 27-34. In fact 436,736 acres lands surveyed in 1847 and 1848, including land between the St. Croix and Mississippi rivers, had already been offered for sale at the Chippewa land district office located in St. Croix Falls, the county seat of St. Croix County, Wisconsin Territory. It is perhaps surprising that the deputies did not pay particular attention to the St. Croix River, which had been identified as the western boundary of the future state of Wisconsin in federal legislation enacted in 1846, supra note 1.

<sup>3</sup> United States, Congress, Senate, General Land Office. Annual Report for 1848. S. exec. doc. 12, 30<sup>th</sup> Congress 2<sup>nd</sup> session. Serial Set 539 p.106 ff

<sup>4</sup> The Organic Act establishing Minnesota Territory can be found 9 Stat. 403. Although it has been suggested that the area between the St. Croix and Mississippi was without government this is not the case. ?????????????? Butterfield to Booth July 9, 1849 (National Archives, Microcopy No. 27, Roll 13, Page 175, General Land Office, Letters Sent to Surveyors General. Federal legislation enacted in 1833, 4 Stat. 663, had, in fact, established the principle of closing the public land surveys against state boundaries. White, C. Albert. A History of the Rectangular Survey System (Washington D.C. Government Printing Office, 1982) p.88.

<sup>5</sup> Booth to Butterfield July 20, 1849,

<sup>6</sup> His report was dated November 11, 1850 and can be found in United States, Congress, Senate, General Land Office, Annual Report for 1850. S. exec. doc. 2, 31<sup>st</sup> Congress 2<sup>nd</sup> session. Serial Set 588 pp.49-50.

<sup>7</sup> These articles stem from a paper written by Marc determining the direction of the East-West Quarter Line of Section 30, Township 32 North, Range 19 West that crossed the St. Croix River. It is tempting to refer to the second set of field notes and plats as duplicate copies of the original. But the evidence we present here suggests a more complicated picture.

<sup>8</sup> The land records of the Wisconsin Board of Commissioners of Public Land, containing both the field notes and the township plats for the seven townships can be found online at <http://bcpl.wisconsin.gov/category.asp?linkcatid=2824&linkid=1440&locid=145>.

<sup>9</sup> Field notes for the seven townships can be found in the collections of the Secretary of State in the Minnesota Historical Society, index online at <http://www.mnhs.org/library/findaids/secst025.pdf>. All of the notebooks can be found in the Minnesota History Society Collections at <http://www.mnhs.org/library/findaids/secst025.pdf>. Volume 135 can be found in 111.J.2.6F and Volume 119 in 111.J.2.5B. Plats for the same townships can be found in the Minnesota History Society Collections, index online at <http://www.mnhs.org/library/findaids/secst026.pdf>. The plats themselves can be viewed online at <http://www.gis.state.mn.us/GLO/Index.htm>.

<sup>10</sup> See Rod Squires, "The First Township Exteriors in Minnesota" supra note 3

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<sup>11</sup> See White, supra note 7, pp. 340-355 especially pp. 342-243 that describes how township lines and subdivision lines were to be run.

<sup>12</sup> All of these notebooks can be found in the Minnesota History Society Collections Catalogued as 111.J.1.1B, see index online at <http://www.mnhs.org/library/findaids/secst025.pdf>

<sup>13</sup> On the basis of this, which appears on several other notebooks, see below, and the fact that there is a remarkable uniformity of handwriting in the Wisconsin field notes we suggest these notebooks are transcriptions of the original notes. Wiltse was awarded a contract to run the Correction Line to the Mississippi but these notes end before then. They are, in fact, continued in vol. 132 in the Minnesota Historical Collections, see below.

<sup>14</sup> Marc is convinced of the Justice's name. Rod thinks it may be J.B. Casey or J.B. Coney

<sup>15</sup> Remember, he was surveying according to the 1846 instructions, see Squires, supra note 3

<sup>16</sup> We do not know the significance of the No.3.

<sup>17</sup> A piece of evidence for supposing that the notes by Wiltse in the Minnesota and Wisconsin collections are merely two parts of a single set of notes is the fact that Wiltse received a contract to run the Correction Line from the Principal Meridian to the Mississippi, not to a particular corner of a township.

<sup>18</sup> The field notes in the Wisconsin collections are found in six volumes. In the Minnesota collections they occupy three volumes.

<sup>19</sup> Note the surveys did not take place in Wisconsin Territory because, of course, the jurisdiction no longer existed.

<sup>20</sup> The bulk of the township lies east of the St. Croix.

<sup>21</sup> We could presume, since the bulk of the township was in Minnesota then the original notes were in the Minnesota Collections

<sup>22</sup> letters sent 192

<sup>23</sup> Just where are the original notes for that part of T26N R20W lying in Minnesota?

<sup>24</sup> Just who wrote "copied" and when is unknown

<sup>25</sup> Online at <http://digicoll.library.wisc.edu/cgi-bin/SurveyNotes/SurveyNotes-idx?type=article&dtype=Sketch+Map&twp=T032NR019W>

<sup>26</sup> The 1850 plat is clearly marked "Copy". Interestingly, Surveyor General Jones certification statement on the plat dated April 18, 1848 describes the township as being in Minnesota. This, of course is not correct. In April 1848 the township was in Wisconsin Territory. On the earlier "original" plat the certification statement shows the townships as being, correctly, in Wisconsin Territory. Such a discrepancy clearly suggests that the certified copy was made after Minnesota became a Territory.

## **The Boundary Lines of the Half-Breed Reservation in Minnesota Territory**

Rod Squires, University of Minnesota

### **Introduction**

On July 15, 1830 representatives of the United States and representatives of the Sioux, the Sacs and Foxes, and the Omahas, the Ioways, the Ottoes, and the Missouriias, signed a treaty at Prairie du Chien in Michigan Territory.<sup>1</sup> Under the provisions of the treaty, the bands ceded their occupancy and use rights to lands west of the Mississippi. (Royce Area 152 and 153 Figure 1)<sup>2</sup> Article 9 of the treaty, stated,

The Sioux Bands in Council having earnestly solicited that they might have permission to bestow upon the half breeds of their Nation, the tract of land within the following limits, to wit: Beginning at a place called the barn, below and near the village of the Red Wing Chief, and running back fifteen miles; thence in a parallel line with Lake Pepin and the Mississippi, about thirty-two miles to a point opposite Beef or O-Boeuf River; thence fifteen miles to the Grand Encampment opposite the River aforesaid; The United States agree to suffer said half Breeds to occupy said tract of country; they holding by the same title, and in the same manner that other Indian Titles are held.<sup>3</sup>

This reservation, known as the Lake Pepin Reservation (Royce Area 292, Figure 1) would become a short-lived barrier to the spread of the public land survey lines in southwestern Minnesota over lands ceded in treaties of 1851 (Royce Area 289, Figure 1). The reservation boundaries, although described in the treaty, would not be defined until 1855, somewhat paradoxically the year it was effectively abolished.<sup>4</sup> For over twenty years, however, the reservation was the subject of debate.<sup>5</sup>

### **The Public Land Surveys of 1853**

In 1853 the Surveyor General of Wisconsin and Iowa, Warner Lewis, awarded a contract to Elisha Norris to establish the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> standard parallels and the 1<sup>st</sup>, 2<sup>nd</sup>, and 3<sup>rd</sup> guide meridians west of the Mississippi in Minnesota Territory.<sup>6</sup> He was obviously aware of the reservation because in his instructions to Norris he wrote,

By reference to the accompanying map ... which has been carefully compiled in this office it will be seen that said Meridian [1<sup>st</sup> Guide Meridian] will strike the Southern boundary of the Reservation set aside for the use of the Half Breeds of the Sioux Nation under Treaty of July 15<sup>th</sup> 1830 before it reaches the river. Should this prove to be correct you are to carry said Meridian no farther than the limits of said reservation; but at the point of intersection, plant a monument, take the proper bearings within your own work, and give the intersection with the nearest corner planted on the boundary of said Half Breed tract.<sup>7</sup>

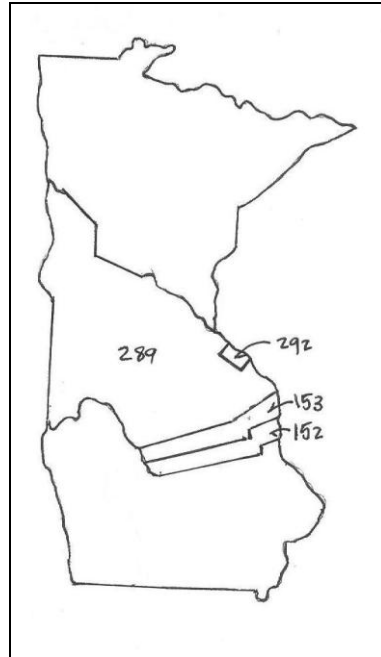


Figure 1. Indian Cessions mentioned

On July 28, Norris sent his first returns to Lewis, stating,

You will notice that I have extended the 1<sup>st</sup> Meridian and the 2<sup>nd</sup> Correction to the Mississippi River. The boundary line of the Sioux half-breed reserve has probably never been run and if so, there is none, now in existence (sic) and I felt required in case such boundary line could not be found to continue mine to the Mississippi, I trust the Commissioner will see the propriety of compensating me the same as for the balance of the lines.<sup>8</sup>

Lewis also contracted with William Jones, John Ball, and Norris to run the township exteriors and with numerous deputies to subdivide those townships in the area east of the 2<sup>nd</sup> Guide Meridian although unfortunately we do not have the instructions each was given. Except in the case of three townships, Lewis avoided awarding contracts that involved land within the reservation or land across which the boundary line would run.

He clearly wanted to get the reservation boundary surveyed.<sup>9</sup> On October 31, 1853 the Commissioner of the General Land Office, responding to a letter from Lewis requesting instructions about the public land survey lines and the reservation, stated,

This reservation is to be respected in the public surveys which include it. It has never been surveyed and you will have to instruct your Deputy to determine the position of the lines from the language of the Treaty as well as he can – and as the lines are determined the township and section lines will have to connect and close even if the former have continued to the Mississippi. It would be well for you to request the Indian Agent in Minnesota to cooperate with the Deputy in determining the lines of the reservation. It is understood that the Governor of the Territory is ex-officio Indian

Agent. I have requested the Commissioner of Indian Affairs to express to the Governor the desire that he would cooperate with you.<sup>10</sup>

The following day the Commissioner wrote again,

Enclosed is a copy of a letter from the Acting Commissioner of Indian Affairs in regard to the facilities that may be expected to be afforded to the Deputy Surveyor in effecting the survey of the reservation on the Mississippi named in the 9<sup>th</sup> Article of the Sac & Fox treaty of 15<sup>th</sup> July 1830 ....<sup>11</sup>

Nothing apparently happened and the need for surveying the boundaries of the reservation was overtaken by a larger issue, the ownership of the land within those boundaries.

### **Federal Legislation in 1854**

On January 16, 1854 Minnesota Territorial Delegate Henry M. Rice introduced a bill, H.R.338, "to purchase the Sioux half-breed reservation on Lake Pepin, in the Territory of Minnesota" into the House of Representatives.<sup>12</sup> It was referred to the Committee on Indian Affairs which, on February 23, 1854, reported the bill to the full House.<sup>13</sup> In the report was a letter from the Commissioner of Indian Affairs in which he stated,

The regular surveys have been extended almost up to this reservation, and it would be expedient that they should be continued so as to include it. The outer boundaries could be run to ascertain its area, and the amount, not exceeding 640 acres in any case, to which each [half-breed] would be entitled under the treaty [of 1830].<sup>14</sup>

He offered an opinion, perhaps a little outside his expertise,

There would be no necessity, however, for making fractions on each side of the boundaries of this reserve, as the scrip proposed by the act could be located by legal subdivision.

By this means the harmony and uniformity of the surveys would not be marred, and the expense would be less than if the reserve were specially surveyed.<sup>15</sup>

On July 17, President Franklin Pierce signed an act "to cause to be surveyed the tract of land in the territory of Minnesota belonging to the half-breeds, or mixed bloods, of the Dakota or Sioux nation of Indians."<sup>16</sup> The most important part of the legislation was Section 8, which stated,

that from and after passage of this act, the President is authorized to have the lands within the said reserve surveyed and exposed to public sale at the Land-Offices for the districts in which said land may be, according to the several land districts established by Congress, in the same manner as other public lands.<sup>17</sup>

### **The Reservation Surveyed**

The following year, on May 15, 1855, Surveyor General Lewis awarded Thomas Gilmore a contract to establish townships in the area recognized to be within the Reservation and to subdivide some of them.<sup>18</sup> In his special instructions to Gilmore Lewis wrote,

Your contract of this day authorizes you to survey and establish all the proper township and range lines thereon specified in strict accordance with the printed instructions herewith furnished. You are also required as often as your lines touch the Mississippi river to ascertain the right angled width of the same, and at least once in each township to show the connection with the public surveys on the opposite side which count from the Wisconsin Base and Meridian.

Said contract also requires that you should survey the North and South boundary of the "Sioux Half Breed Reservation" at the foot of Lake Pepin. The boundaries of this reservation are thus described "Beginning at a place called the Barn, below & near the village of the Red Wing Chief and running back fifteen miles thence in a parallel line with Lake Pepin & the Mississippi about thirty-two miles to a point opposite Beef or O-Boeuf River thence fifteen miles to the Grand Encampment opposite the River aforesaid" Your first business will be to define the starting point which is to be the lower end of the formation or elevation called "the Barn" where you are to establish a stone monument to be sunk into the ground at least two feet and to show above the surface one foot, on which you are to mark "Initial point Sioux Half Breed Reservation". From point thus established you are to run back fifteen miles, setting a post at the end of every mile at least six inches square, which, on the side facing the Reservation are to be marked, 1<sup>st</sup> mile S.H.R., and in like manner to the end of the fifteenth mile, which monument is to be of stone and of the same dimensions, as at the initial point.

The terminating point is at the Grand Encampment, opposite the mouth of the Boef or O-Boef river where you are to establish a monument precisely similar to that at the initial except that is to be marked termination instead of initial. Supposing a straight line to be drawn between the initial and terminating points you are to run a line at right angles thereto from both points for fifteen miles back setting monuments as before directed the back and front lines are not to be run or marked at least you cannot be paid for them though it is necessary to state their course as well as the course of the North & South lines.

You are to return the notes of said North and South boundaries of reservation showing the connection with the public surveys in the field books of both (that is you will measure to and give the course from the present corner on the township lines to the nearest point on the N & S boundaries of the Reservation & define with great accuracy the connection of the public surveys with the Initial & Terminating points.

It is almost unnecessary for me to remark that the greatest care and accuracy is requisite in the execution of the surveys entrusted to your charge. No excuse can or will be received for any failure on your part to comply with your instructions.<sup>19</sup>

Between May 26 and July 10 Deputy Gilmore ran township exteriors between the 2<sup>nd</sup> and 3<sup>rd</sup> Standard Parallels.<sup>20</sup> (Figure 3) He then turned his attention to the Reservation boundaries, running the northern boundary line July 20-22 and the southern boundary line July 22-25.<sup>21</sup> He first established the “Initial Point” in section 29T113N R14W on the bank of the Mississippi, then ran a line N10<sup>o</sup>W 9.30 chains to a slough on the Mississippi River.<sup>22</sup> From the “Initial Point” he ran S29<sup>o</sup>W and at one mile & 65 chains intersected “3<sup>rd</sup> Standard Parallel” 1 mile, 43 chains & 45 links East of “Closing corner” to T12 N of Ranges 14 & 15 West 5<sup>th</sup> Mer”.<sup>23</sup> He then continued his line fifteen miles inland, placing a monument every mile and tying in the township corners that he had recently set.<sup>24</sup> At mile fifteen, he “planted stone monument, as directed by special instructions” on July 22, 1855.<sup>25</sup>

He then turned his attention to the southern boundary line July 22-25. In his notes he wrote,

After having established the “Termination Point” as required by Special Instructions, and planted the monument at the point therein directed, to course of point of bluff on south side of the mouth of the Beef river brs N 52<sup>o</sup> E and point of red oak on North side of the mouth of Beef River brs N. 12 ½<sup>o</sup>. An object on the bluff on the opposite side of the Mississippi River brs .....

From “Termination Point” cor to secs 7, 12, 13, & 14 of Town 110 North betn Ranges No. 9 & 10 West 5<sup>th</sup> Mer brs N 61¼ W. 19.05 ch. Meander post on Mississippi River on line between secs 7 & 12 same Township & Range brs N 541/3W 20.40 chs.<sup>26</sup>

Determining that the “Termination Point” lay S61<sup>o</sup>E from the “Initial Point” from the latter, he followed the same method in establishing the southern boundary line as he did for the northern boundary line noting those places where he set his mile posts that could be referenced by the existing township corners.

Finally, to finish his contract, he proceeded to subdivide 12 of the full or fractional townships he had established.<sup>27</sup> In T109N R10W and T110N R10W, Gilmore noted the distance and direction of the reservation boundary mile post where his lines intersected the reservation boundary line.<sup>28</sup>

### **The Reservation Boundary as Shown on the Plats**<sup>29</sup>

The northern and southern portions of the boundary line was run in 1855 over areas that were in various states of survey. The northern portion of the line was run over an area that had been surveyed, by Norris who had run the 2<sup>nd</sup> and 3<sup>rd</sup> Standard Parallels and the 1<sup>st</sup> Guide Meridian to the Mississippi in 1853, and by Thomas Gilmore who established township exteriors in 1855. Gilmore referenced this portion of the line to the 3<sup>rd</sup> Standard Parallel established by Norris in 1853 and to the exterior lines of four townships he had established two months previously. These townships were subdivided by William I Anderson in 1856 and the plats compiled to show the boundary line and the lots created by its intersection with the subdivision lines. The acreage of the lots, I assume, would have been determined arithmetically as the draftsmen drew the plats.<sup>30</sup> The southern portion of the line was run over one full and two fractional townships that had been established by Gilmore in 1855 and, most interestingly, over two townships, lying south of the 2<sup>nd</sup> Standard Parallel, that had already been completely surveyed.<sup>31</sup> Gilmore referenced a portion

of the line to the 2<sup>nd</sup> Standard Parallel and to the exterior lines of three townships he had already established and to the townships established earlier. Gilmore subdivided the townships he had established in 1855 and subsequently the plats drawn to show the boundary line and the lots created by its intersection with the subdivision lines and their computed acreage. But what of the townships that had already been completely surveyed and their plats certified, T108N R11W on July 21, 1854 and T108N R10W on May 23, 1855? Quite obviously, these plats were altered to show the boundary line.

The inland boundary of the Reservation was never run on the ground but merely protracted between the fifteen-mile corners that marked the end of the northern and southern boundaries.<sup>32</sup> For the most part the boundary ran through six townships that had been established by Gilmore so that the line would have been incorporated into the plat after the townships had been subdivided, sometime in 1856. To complicate matters, however, two townships had already been surveyed and the plats made before the boundary line was run. T108N R11W has already been mentioned and T108N R12W was certified by Lewis July 21, 1854. These plats must have been altered to show the boundary line.

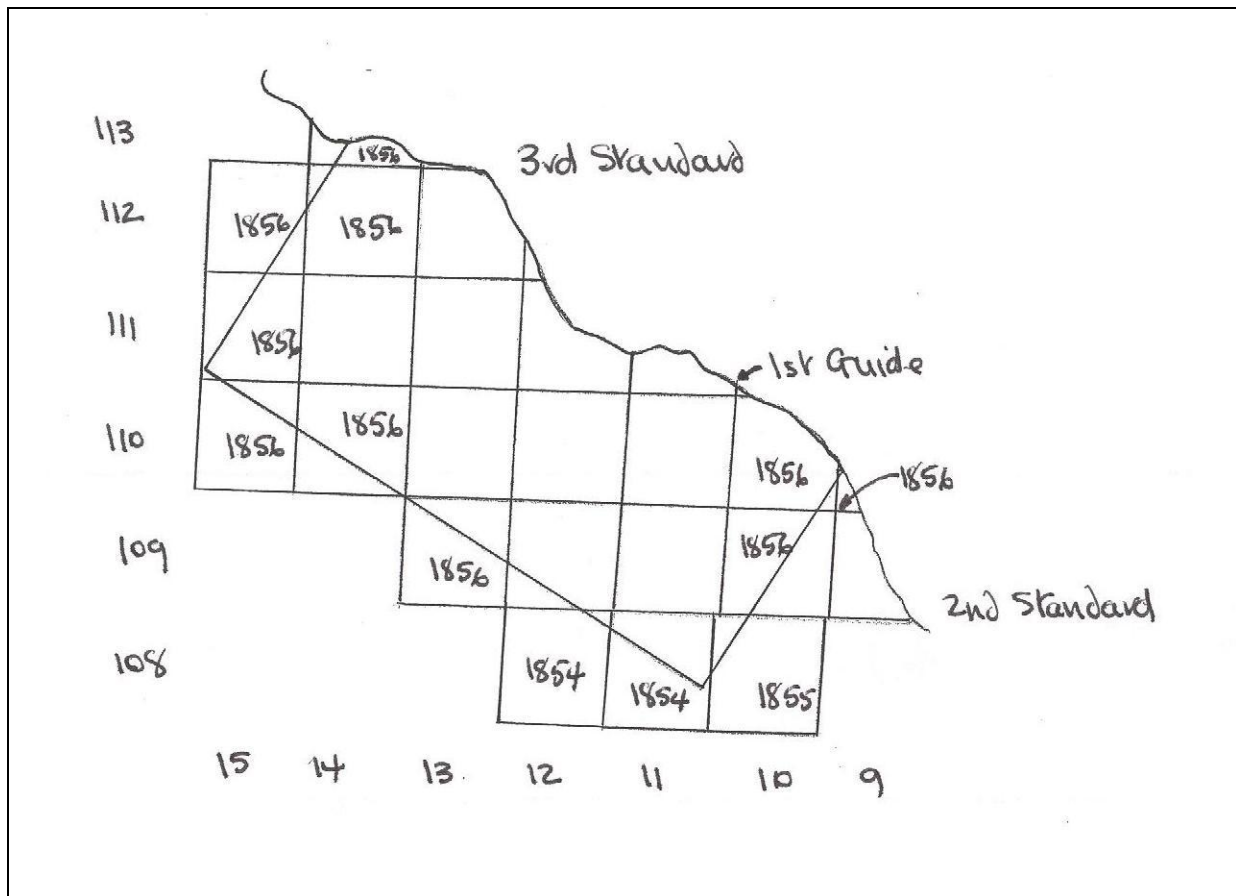


Figure 2. Townships through which the Reservation Boundary passed. Dates when plats were certified.

## Conclusion

The map accompanying the Surveyor General's annual report dated October 21, 1855 shows the township exteriors that Gilmore had run and the boundaries of the Reservation, which had also been run. (Figure 3) In his report Lewis makes no special mention of any problems associated with Gilmore's work and the following year the Surveyor General reported that the reservation had been surveyed and the area was approximately 320, 000 acres.<sup>33</sup>

This article, and the previous one, suggest that although the certified township plats are important documents they should be used with care and the knowledge of the surveys that created them.

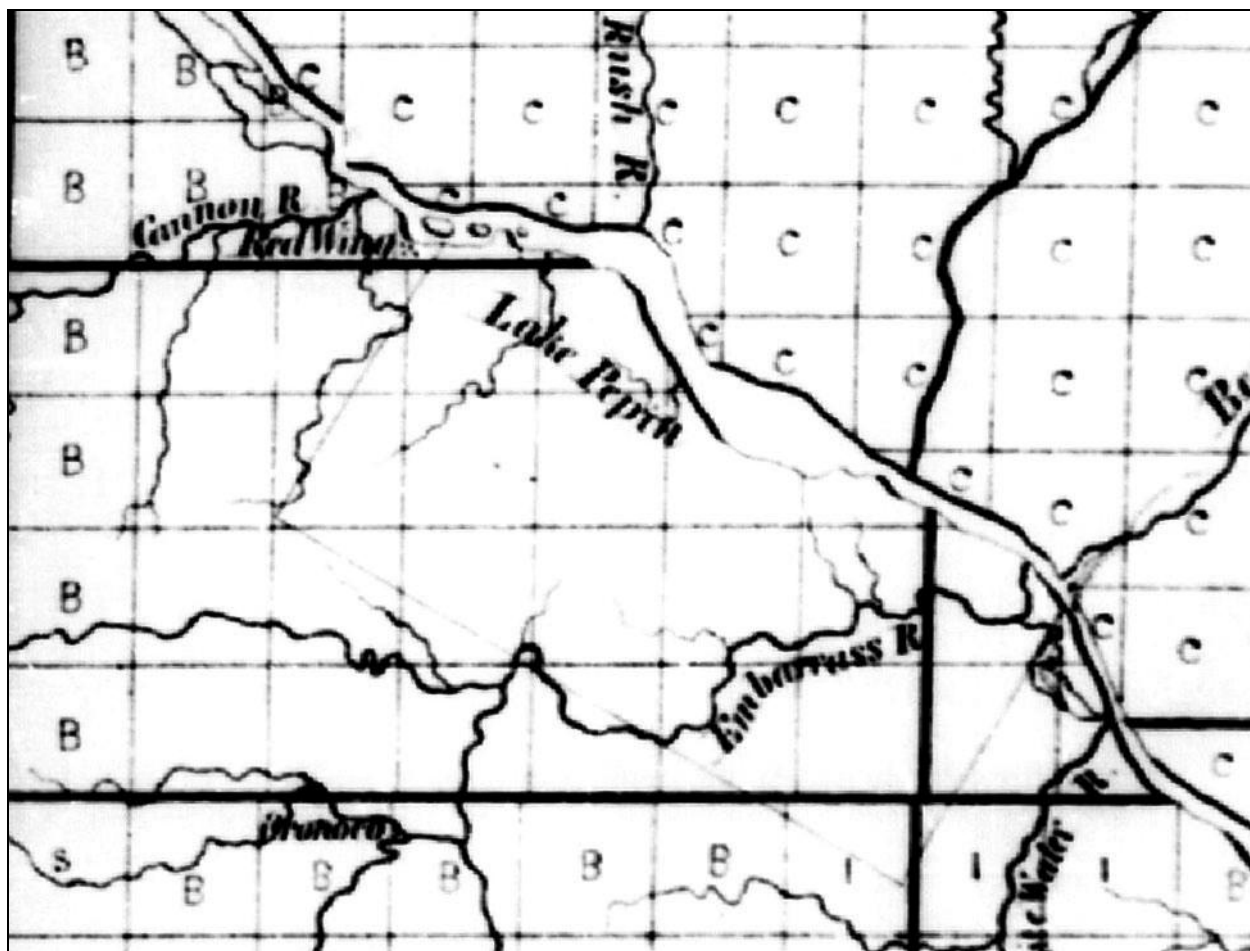


Figure 3. Map Accompanying Annual Report dated October 21, 1855

<sup>1</sup> The treaty, proclaimed February 24, 1831, can be found in 7 Stat. 328.

<sup>2</sup> Charles C. Royce. "Indian Land Cessions in the United States" in Eighteenth Annual Report of the Bureau of American Ethnology (Government Printing Office, Washington, D.C. 1900) H.

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doc. 736. 56<sup>th</sup> Congress 1<sup>st</sup> Sess. Serial Set 4015 online at <http://memory.loc.gov/ammem/amlaw/lwss-ilc.html>.

<sup>3</sup> Supra note 1.

<sup>4</sup> 10 Stat 304. The act authorized the President to exchange the interest each half-breed, or mixed blood, possessed in the land under the 1830 treaty for scrip entitling them to acquire title to land within the boundaries of the reservation. See William Watts Folwell. A History of Minnesota (Minnesota history Society, St. Paul MN. 1822) 482-486, William Milliken “The great treasure of Fort Snelling military camp.” Minnesota History vol. 62 No. 1 (Spring 2010) 1-17.

<sup>5</sup> A history of the debate can be found House Report 138 33<sup>rd</sup> Congress 1<sup>st</sup> Session Serial 743.

<sup>6</sup> Rod Squires. “Standard parallels and guide meridians in western Minnesota: the surveys of Elisha S. Norris.” Minnesota Surveyor vol.16 No.3 (Autumn, 2008) 27-36.

<sup>7</sup> This letter was transcribed by Don Borcharding several years ago from a letter in Iowa State Archives, Land Records. Record Group 81. Letters Sent Letterbook C. Unfortunately, it appears that this letter, and several others sent between May 9, 1853 and December 5, 1853, are now missing.

<sup>8</sup> Id. Norris added,

None of the lines above have been run to the main channel of the River. The high water rendered it impossible to extend the lines onto and across the Islands. I would respectfully suggest that the subdividing deputies might be instructed to do this should it be desired to put it under contract.

<sup>9</sup> A question that quite naturally arises is why does the reservation boundary line matter? Importantly, the reservation was established by treaty between the federal government and American Indian bands, both of which possessed treaty-making power. But the rights to land in the reservation had been given to half-breeds, or mixed bloods, who did not possess a similar treaty-making power. So Congress could not merely negotiate a treaty with the half breeds in which the half breeds would cede their rights in the reservation and the reservation disestablished. Congress had to enact legislation that firstly, recognized the rights of the half-breeds to land in the reservation, secondly, provide that the half-breeds could exercise those rights, while thirdly extinguishing the reservation.

<sup>10</sup> National Archives. Letters Sent by the General land Office to Surveyors General, 1796-1901 M27 vol.15 484-485. We can only guess at the contents of Lewis’ letter of September 30 because the relevant pages in the letterbook are missing.

<sup>11</sup> Id. 488.

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<sup>12</sup> Considerable amount of debate about how the half-breed rights to the land in the reservation could be extinguished.

<sup>13</sup> H Rpt 138 13.

<sup>14</sup> Id.

<sup>15</sup> Id.

<sup>16</sup> 10 Stat. 304 Most of the provisions of the act, although important in the history of federal land disposal in Minnesota, are not relevant to the surveys themselves. See Folwell *supra* note 4. Whether there is any connection between this legislation and legislation enacted on May 5, 1854 granting pre-emption rights to individuals settling on unsurveyed lands in Minnesota, giving individuals who had settled on land before it was surveyed the right to acquire title to the land before it was offered for sale at public auction, can only be surmised.

<sup>17</sup> Id.

<sup>18</sup> For the most part at the time exteriors and subdivisions were run by different deputies.

<sup>19</sup> Iowa State Archives, Land Records. Record Group 81. Letters Sent Letterbook D December 5 1853 - April 25, 1857 416-417

<sup>20</sup> The field notes to the exteriors can be found in volumes 23-25 in the Minnesota Historical Society Secretary of State collections, location 111.J.1.3B.

<sup>21</sup> His field notes are labeled “Survey of the North and South Boundaries of the Sioux Half Breed Reservation on Lake Pepin” and are contained in Book 17 Minnesota Historical Society collections location 111.J.1.10F.

<sup>22</sup> Id. 1.

<sup>23</sup> He only noted the distance and direction of the mile post he set on the boundary line when it lay near enough to a corner he had previously set when running the township exteriors.

<sup>24</sup> In the margins of his notes Gilmore stated “a” or “d” followed by a number. I can only presume he was describing whether he was ascending or descending and the angle of his route.

<sup>25</sup> Id. 19.

<sup>26</sup> Id. 1-3.

<sup>27</sup> The field notes of the subdivisions used here, T108N R 10W, T109N R10W, and T110N R10W can be found in vol. 272 in the Minnesota Historical Society “Secretary of State” collections, location 111.J.3.3B.

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<sup>28</sup> I presume that the same statement would hold true in other township through which the boundary line was run prior to being subdivided by Gilmore and William Anderson in 1855 and 1856.

<sup>29</sup> Interestingly, the boundary line of the reduced Fort Snelling military reservation was different.

<sup>30</sup> I have no information regarding how the lots were numbered.

<sup>31</sup> The plat for T108N R10W was certified 1855 and the plats for T108N R11W and T108N R12W in 1854.

<sup>32</sup> On the T108N R 11W certified plat the boundary line is labeled “Prolonged by protraction.”

<sup>33</sup> S. Exec. Doc. 5 34<sup>th</sup> Congress 3<sup>rd</sup> Session Serial 875 (1856) 214 Although the surveys were complete, this would not be the end of the problem associated with this Reservation, sSee supra note 4